MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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Dr. Paul H. Ringer

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TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA

EIGHTY-THIRD ANNUAL SESSION

HELD AT

ASHEVILLE, NORTH CAROLINA

May 4-5-6, 1936

PRESIDENT
PAUL H. RINGER, M.D., F.A.C.P., ASHEVILLE

SECRETARY-TREASURER
L. B. McBRAYER, M.D., F.A.C.P., SOUTHERN PINES

COMMITTEE ON PUBLICATIONS

Dr. L. B. McBrayer, *Secretary-Treasurer, Chairman ex-officio*.....Southern Pines
Dr. J. W. Dickie.....Southern Pines
Dr. E. C. Judd.....Raleigh

"It is understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the Transactions of the Society."

—*Extract from By-Laws, Chapter 10, Section 8.*

EARLY HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1804

Date	Place	President	Vice-Presidents	Corresponding Secretary	Secretary	Recording Secretary	Treasurer	Censors
Dec. 17, 1799, or April 16, 1800	Raleigh	Richard Fenner	Nathaniel Loomis John Claiborne	Calvin Jones		Wm. B. Hill	Cargill Massenburg	Sterling Wheaton James Webb Jas. John Pasteur Jason Hand
Dec. 1, 1800	Raleigh	Richard Fenner			Sterling Wheaton			
Dec. 1, 1801	Raleigh	John C. Osborne	Thomas Mitchell Richard Fenner	Calvin Jones	Sterling Wheaton		Cargill Massenburg	James Webb John Sibley
1802	Raleigh	John C. Osborne		Calvin Jones				
1803	Raleigh	John C. Osborne		Calvin Jones				
1804	Raleigh	John C. Osborne		Calvin Jones				

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1935

*Missing Data Not to be Found in Record

	Date	Place of of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
	1849	Raleigh	25	F. J. Hill		W. H. McKee		25		
1	1850	Raleigh	21	E. Strudwick	F. J. Haywood, C. E. Johnson, J. E. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	
2	1851	Raleigh	23	E. Strudwick	C. E. Johnson.	W. H. McKee	W. G. Hill	46	0	
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	
4	1853	Fayetteville	24	J. E. Williamson	William G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree	80	14	
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	
7	1856	Raleigh	35	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	
8	1857	Edenton	25	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	
9	1858	New Bern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	
10	1859	Statesville	81	W. H. McKee	James G. Ramsey, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham			
11	1860	Washington	64	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	244	18	
13	1866	Raleigh	20	J. J. Summerell	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	W. G. Thomas	C. W. Graham			
14	1867	Tarboro	41	W. G. Thomas		S. S. Satchwell	C. W. Graham	288	11	
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George A. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones			
16	1869	Salisbury	36	E. B. Haywood	Thomas E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones			
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Luckey, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones			
18	1871	Raleigh	35	Hugh Kelley	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirby.	Thomas F. Wood	J. W. Jones			
19	1872	New Bern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones			

20	1873	Statesville	43	M. Whitehead	W. T. Ennett, William Little, Charles Duffy, P. T. Jerman.	James McKee	H. T. Bahnson			
21	1874	Charlotte	56	W. A. B. Norcom	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson			
22	1875	Wilson	60	J. W. Jones	Walker Debnam, J. A. Gibson, William Little, D. N. Patterson.	James McKee	H. T. Bahnson	148	5	
23	1876	Fayetteville	33	Peter E. Hines	J. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T. Bahnson	157	4	
24	1877	Salem	42	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee	A. G. Carr	177	4	
25	1878	Goldsboro	79	R. L. Payne	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot	A. G. Carr	194	6	
26	1879	Greensboro	109	Chas. Duffy, Jr.	J. A. Gibson, Willis Alston, James McKee, A. A. Hill.	L. J. Picot	A. G. Carr	198	6	
27	1880	Wilmington	105	J. F. Shaffner	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot	A. G. Carr	225	6	
28	1881	Asheville	92	R. B. Haywood	J. E. McRee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr	254	6	
29	1882	Concord	65	Thos. F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr	297	7	
30	1883	Tarboro	112	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr	310	7	
31	1884	Raleigh	112	A. B. Pierce	F. W. Potter, G. W. Graham, R. Dillard, G. W. Long.	L. J. Picot	A. G. Carr	348	7	
32	1885	Durham	173	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy	R. L. Payne, Jr.	424	6	
33	1886	New Bern	113	Joseph Graham	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker	R. L. Payne, Jr.	438	7	
34	1887	Charlotte	112	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Van Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr.	452	7	
35	1888	Fayetteville	133	T. D. Haigh	W. T. Ennett, J. A. Dunn, T. E. Anderson.	J. M. Baker	C. M. Van Poole	306	6	
36	1889	Elizabeth City	50	W. T. Ennett	W. J. Jones, S. W. Stevenson, G. W. Long.	J. M. Baker	C. M. Van Poole	410	6	
37	1890	Oxford	160	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. D. Booth.	J. M. Hays	C. M. Van Poole	414	6	
38	1891	Asheville	135	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H. Lilly.	J. M. Hays	C. M. Van Poole	422	6	
39	1892	Wilmington	162	W. T. Cheatham	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays	C. M. Van Poole	431	6	
40	1893	Raleigh	221	J. W. McNeill	W. C. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M. P. Perry	447	5	3
41	1894	Greensboro	166	W. H. H. Cobb	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry	454	5	3
42	1895	Goldsboro		J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry	436	7	3
43	1896	Winston-Salem	158	R. L. Payne	S. D. Booth, J. P. Munroe, J. A. Burroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry	452	7	3

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1935

*Missing Data Not to be Found in Record

Date		Place of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
44	1897	Morehead City	103	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry	406	6	3
45	1898	Charlotte	*	Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett	M. P. Perry	437	6	21
46	1899	Asheville	152	L. J. Picot	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	Geo. W. Presley	G. T. Sikes	489	6	16
47	1900	Tarboro	115	George W. Long	C. M. Van Poole, James M. Parrott, T. B. Williams, W. D. Hilliard.	Geo. W. Presley	G. T. Sikes	482	6	21
48	1901	Durham	186	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	Geo. W. Presley	G. T. Sikes	515	5	18
49	1902	Wilmington	147	Robert S. Young	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	Geo. W. Presley	G. T. Sikes	546	5	20
50	1903	Hot Springs	155	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way	G. T. Sikes	530	6	19
51	1904	Raleigh	326	H. B. Weaver	John Hey Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T. Sikes	1,033	8	17
52	1905	Greensboro	361	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison.	J. Howell Way	G. T. Sikes	1,175	8	17
53	1906	Charlotte	406	E. C. Register	L. B. McBrayer, W. H. Cobb, Jr., W. O. Spencer.	J. Howell Way	G. T. Sikes	1,234	8	16
54	1907	Morehead City	217	Samuel D. Booth	C. M. Strong, J. E. McLaughlin, W. F. Hargrove.	David A. Stanton	H. McK. Tucker	888	7	16
55	1908	Winston-Salem	372	J. Howell Way	J. E. Stokes, J. A. Turner, W. H Dixon.	David A. Stanton	H. McK. Tucker	998	7	28
56	1909	Asheville	337	J. F. Highsmith	C. M. Van Poole, D. A. Garrison, D. O. Dees.	David A. Stanton	H. McK. Tucker	1,067	7	25
57	1910	Wrightsville Beach	276	J. A. Burroughs† E. J. Wood	E. J. Wood, John Q. Myers, L. D. Wharton.	David A. Stanton	H. D. Walker	1,080	8	35
58	1911	Charlotte	412	C. M. Van Poole	J. V. McGougan, W. E. Warren, L. N. Glenn.	David A. Stanton	H. D. Walker	880	8	45
59	1912	Hendersonville	296	A. A. Kent	J. P. Munroe, W. P. Horton, J. G. Murphy.	David A. Stanton	H. D. Walker	950	8	44
60	1913	Morehead City	232	J. P. Munroe	F. R. Harris, E. S. Bullock, L. B. Morse.	John A. Ferrell	H. D. Walker	1,133	8	40
61	1914	Raleigh	431	J. M. Parrott	E. T. Dickinson, J. T. J. Battle, D. E. Sevier.	John A. Ferrell	H. D. Walker	1,228	8	47
62	1915	Greensboro	443	L. B. McBrayer	J. J. Phillips, C. W. Moseley, S. M. Crowell.	John A. Ferrell	H. D. Walker	1,221	9	68

†Died during his term of office; succeeded by E. J. Wood, first vice-president.

63	1916	Durham	406	M. H. Fletcher	J. L. Nicholson, L. N. Glenn, W. H. Hardison.		Benj. K. Hays	W. M. Jones	1,228	10	79
64	1917	Asheville	280	Charles O'H. Laughinghouse	D. J. Hill, J. L. Spruill, J. H. Shuford.		Benj. K. Hays	W. M. Jones	1,271	11	81
65	1918	Pinehurst	291	I. W. Faison	Wm. deB. MacNider, Jos. B. Greene, Ben F. Royal.		Benj. K. Hays	W. M. Jones	1,087	11	81
							Sec-Treas	Acting Sec.-Treas.			
66	1919	Pinehurst	335	Cyrus Thompson	J. W. Halford, T. W. Davis, A. McN. Blair.		Benj. K. Hays	L. B. McBrayer	1,306	11	100
67	1920	Charlotte	479	C. V. Reynolds	H. D. Walker, F. Stanley Whitaker, Thomas I. Fox.		Benj. K. Hays	L. B. McBrayer	1,497	12	100
68	1921	Pinehurst	404	T. E. Anderson	C. S. Lawrence, W. H. Ward, J. M. Manning.		Benj. K. Hays	L. B. McBrayer	1,491	12	93
								Sec.-Treas.			
69	1922	Winston-Salem	507	H. A. Royster	W. T. Parrott, B. C. Nalle, J. R. McCracken.			L. B. McBrayer	1,571	12	100
70	1923	Asheville	356	J. W. Long	F. M. Hanes, T. C. Johnson, B. L. Long.			L. B. McBrayer	1,592	9	101
71	1924	Raleigh	525	J. V. McGougan	J. L. Spruill, ‡Eugene B. Glenn, D. A. Garrison.			L. B. McBrayer	1,604	9	106
72	1925	Pinehurst	550	Albert Anderson	W. L. Dunn, A. E. Bell, K. G. Averitt.			L. B. McBrayer	1,657	10	116
73	1926	Wrightsville Beach	445	Wm. deB. MacNider	J. P. Matheson, W. W. Dawson, H. H. Bass.			L. B. McBrayer	1,663	10	107
74	1027	Durham	653	John Q. Myers	J. W. Carroll, A. Y. Linville, C. H. Cocke.			L. B. McBrayer	1,691	10	121
75	1928	Pinehurst	611	John T. Burrus	G. H. Macon, R. F. Leinbach, W. R. Griffin.			L. B. McBrayer	1,738	11	143
76	1929	Greensboro	671	Thurman D. Kitchin	Dr. W. L. Dunn,* Asheville, Dr. D. T. Tayloe, Jr., Washington, Dr. W. D. James, Hamlet.			L. B. McBrayer	1,666	11	146
77	1930	Pinehurst	701	L. A. Crowell	W. B. Murphy, Wm. E. Warren, N. B. Adams.			L. B. McBrayer	1,711	11	155
					President-Elect	Vice-Presidents					
78	1931	Durham	714	J. G. Murphy	M. L. Stevens	C. A. Julian, Greensboro		L. B. McBrayer	1,600	10	164
79	1932	Winston-Salem	740	M. L. Stevens	Jno. B. Wright	J. W. Davis, Statesville C. W. Banner, Greensboro		L. B. McBrayer	1,559	10	166
80	1933	Raleigh	714	Jno. B. Wright	I. H. Manning	W. W. Sawyer, Elizabeth City J. R. McCracken, Waynesville		L. B. McBrayer	1,363	10	181
81	1934	Pinehurst	728	I. H. Manning	P. P. McCain	W. G. Suiter, Weldon R. L. Felts, Durham		L. B. McBrayer	1,563	10	210
82	1935	Pinehurst	706	P. P. McCain	Paul H. Ringer	H. D. Walker, Elizabeth City J. F. McKay, Buie's Creek		L. B. McBrayer	1,619	10	215
83	1936	Asheville	583	Paul H. Ringer	C. F. Strosnider	William Allen, Charlotte J. K. Pepper, Winston-Sal. E. S. Bulluck, Wilmington		L. B. McBrayer	1462	10	235

* Died during term of office.

ROSTER OF MEMBERS OF THE VARIOUS BOARDS OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA

FIRST BOARD

JAMES H. DICKSON, Wilmington 1859-1866
CHARLES E. JOHNSON, Raleigh 1859-1866
CALEB WINSLOW, Hertford 1859-1866
OTIS F. MANSON, Townsville 1859-1866
WILLIAM H. McKEE, Raleigh 1859-1866
CHRISTOPHER HAPPOLDT, Morganton 1859-1866
J. GRAHAM TULL, New Bern 1859-1866
SAMUEL T. IREDELL, Secretary 1859-1866

SECOND BOARD

N. J. PITTMAN, Tarboro 1866-1872
E. BURKE HAYWOOD, Raleigh 1866-1872
R. H. WINBORNE, Edenton 1866-1872
S. S. SATCHWELL, Rocky Point 1866-1872
J. J. SUMMERELL, Salisbury 1866-1872
R. B. HAYWOOD, Raleigh 1866-1872
M. WHITEHEAD, Salisbury 1866-1872
J. F. SHAFFNER, Salem 1866-1872
WILLIAM LITTLE, Secretary 1866-1867
THOMAS F. WOOD, Secretary, Wilmington 1867-1872

THIRD BOARD

CHARLES J. O'HAGAN, Greenville 1872-1878
W. A. B. NORCOM, Edenton 1872-1878
C. TATE MURPHY, Clinton 1872-1878
GEORGE A. FOOTE, Warrenton 1872-1878
J. W. JONES, Tarboro 1872-1878
R. L. PAYNE, Lexington 1872-1878
CHARLES DUFFY, JR., Secretary, New Bern 1872-1878

FOURTH BOARD

PETER E. HINES, Raleigh 1878-1884
THOMAS D. HAIGH, Fayetteville 1878-1884
GEORGE L. KIRBY, Goldsboro 1878-1884
THOMAS F. WOOD, Wilmington 1878-1884
JOSEPH GRAHAM, Charlotte 1878-1884
[1]ROBERT I. HICKS, Williamston 1878-1880
[2]RICHARD H. LEWIS, Raleigh 1880-1884
HENRY T. BAHNSON, Secretary, Salem 1878-1884

FIFTH BOARD

WILLIAM R. WOOD, Scotland Neck 1884-1890
AUGUSTUS W. KNOX, Raleigh 1884-1890
FRANCIS DUFFY, New Bern 1884-1890
PATRICK L. MURPHY, Morganton 1884-1890
WILLIS ALSTON, Littleton 1884-1890
J. A. REAGAN, Weaverville 1884-1890
W. J. H. BELLAMY, Secretary, Wilmington 1884-1890

SIXTH AND SEVENTH BOARDS

R. L. PAYNE, JR., Lexington 1890-1892
GEORGE W. PUREFOY, Asheville 1890-1892
GEORGE G. THOMAS, Wilmington 1890-1894
ROBERT S. YOUNG, Concord 1890-1894
WILLIAM H. WHITEHEAD, Rocky Mount 1890-1896
GEORGE W. LONG, Graham 1890-1896
L. J. PICOT, Secretary, Littleton 1890-1896
JULIAN M. BAKER, Tarboro 1892-1898
H. B. WEAVER, Secretary, Asheville 1892-1898
[3]J. M. HAYS, Greensboro 1894-1897
[4]KEMP P. BATTLE, JR., Raleigh 1897-1900
[1]THOMAS S. BURBANK, Wilmington 1894-1898
[1]RICHARD H. WHITEHEAD, Chapel Hill 1896-1898

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[1]Resigned before expiration of term.
[2]Elected for unexpired term of Dr. Hicks.
[3]Died before the expiration of his term.
[4]Elected to serve unexpired term of Dr. Hays.

[2]WILLIAM H. H. COBB, Goldsboro....1898-1900
[3]J. HOWELL WAY, Secretary, Waynesville....1898-1902
DAVID T. TAYLOE, Washington....1896-1902
THOMAS E. ANDERSON, Secretary, Statesville....1896-1902
[4]ALBERT ANDERSON, Wilson....1898-1902
[4]EDWARD C. REGISTER, Charlotte....1898-1902
[4]THOMAS S. McMULLAN, Hertford....1900-1902
[4]JOHN C. WALTON....1900-1902

EIGHTH BOARD

A. A. KENT, Lenoir....1902-1908
CHARLES O'H. LAUGHINGHOUSE, Greenville....1902-1908
M. H. FLETCHER, Asheville....1902-1908
JAMES M. PARROTT, Kinston....1902-1908
J. T. J. BATTLE, Greensboro....1902-1908
FRANK H. RUSSELL, Wilmington....1902-1908
[1]GEORGE W. PRESSLY, Secretary, Charlotte....1902-1906
[5]G. T. SIKES, Secretary, Grissom....1906-1908

NINTH BOARD

LEWIS B. McBRAYER, Asheville....1908-1914
JOHN C. RODMAN, Washington....1908-1914
WILLIAM W. McKENZIE, Salisbury....1908-1914
HENRY H. DODSON, Greensboro....1908-1914
JOHN BYNUM, Winston-Salem....1908-1914
J. L. NICHOLSON, Richlands....1908-1914
BENJ. K. HAYS, Secretary, Oxford....1908-1914

TENTH BOARD

ISAAC M. TAYLOR, Morganton....1914-1920
JOHN Q. MYERS, Charlotte....1914-1920
JACOB F. HIGHSMITH, Fayetteville....1914-1920
MARTIN L. STEVENS, Asheville....1914-1920
[6]CHARLES T. HARPER, Wilmington....1914-1915
[7]EDWIN G. MOORE, Elm City....1915-1920
[8]JOHN G. BLOUNT, Washington....1914-1920
HUBERT A. ROYSTER, Secretary, Raleigh....1914-1920

ELEVENTH BOARD

LESTER A. CROWELL, Lincolnton....1920-1926
WILLIAM P. HOLT, Duke....1920-1926
J. GERALD MURPHY, Wilmington....1920-1926
LUCIUS N. GLENN, Gastonia....1920-1926
CLARENCE A. SHORE, Raleigh....1920-1926
WILLIAM M. JONES, Greensboro....1920-1926
KEMP P. B. BONNER, Secretary, Morehead City....1920-1926

TWELFTH BOARD

PAUL H. RINGER, Asheville....1926-1932
W. HOUSTON MOORE, Wilmington....1926-1932
T. W. M. LONG, Roanoke Rapids....1926-1932
[6]W. W. DAWSON, Grifton....1926-1932
J. K. PEPPER, Winston-Salem....1926-1932
FOY ROBERSON, Durham....1926-1932
JOHN W. McCONNELL, Secretary, Davidson....1926-1932
[9]DAVID T. TAYLOE, JR., Washington....1930-1932

THIRTEENTH BOARD

BEN F. ROYAL, Morehead City....1932-1938
BENJ. J. LAWRENCE, Secretary, Raleigh....1932-1938
F. WEBB GRIFFITH, Asheville....1932-1938
HAMILTON W. McKAY, Charlotte....1932-1938
J. W. VERNON, Morganton....1932-1938
W. H. SMITH, Goldsboro....1932-1938
[6]K. G. AVERITT, Cedar Creek....1932-1936
[10]ROSCOE D. McMILLAN, Red Springs....1936-1938

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[1]Resigned before the expiration of his term.
[2]Elected to serve the unexpired term of Dr. Burbank.
[3]Elected to serve the unexpired term of Dr. Whitehead.
[4]Elected for short term expiring in 1902.
[5]Elected to serve the unexpired term of Dr. Pressly.
[6]Died before the expiration of his term.
[7]Elected to serve the unexpired term of Dr. Harper.
[8]Died a few months before the expiration of his term; such a short time that the vacancy was not filled.
[9]Elected to serve unexpired term of Dr. W. W. Dawson.
[10]Elected to serve unexpired term of Dr. Averitt.

NOTE: In 1890 the Medical Society of the State of North Carolina adopted the plan of electing members of the Board in such a manner that the terms would expire at different intervals of two years. This practice was followed for twelve years, or until 1902, when the plan was abandoned; an equivalent of two terms of six years each. It is evident that the Society arranged to abandon the policy as early as 1898, as two members were elected for short terms, and two years later two other members were elected for still shorter terms. It is therefore impossible to separate the sixth and seventh Boards, since the membership was overlapping.

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH
FROM ORGANIZATION IN 1877 TO 1936

Name	Address	Appointed by	Term
S. S. Satchwell, M.D., President	Rocky Point	State Society	1877 to 1878
Thomas, F. Wood, M.D., Secretary	Wilmington	State Society	1877 to 1878
Joseph Graham, M.D	Charlotte	State Society	1877 to 1878
Charles Duffy, Jr., M.D	New Bern	State Society	1877 to 1878
Peter E. Hines, M.D	Raleigh	State Society	1877 to 1878
George A. Foote, M.D	Warrenton	State Society	1877 to 1878
S. S. Satchwell, M.D., President	Rocky Point	State Society	1878 to 1884
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1878 to 1884
Charles J. O'Hagan, M.D., President	Greenville	State Society	1878 to 1882
George A. Foote, M.D	Warrenton	State Society	1878 to 1882
Marcellus Whitehead, M.D	Salisbury	State Society	1878 to 1880
R. L. Payne, M.D	Lexington	State Society	1878 to 1880
H. G. Woodfin, M.D	Franklin	Gov. Z. B. Vance	1878 to 1880
A. R. Ledeux, Chemist	Chapel Hill	Gov. Z. B. Vance	1878 to 1880
William Cain, Civil Engineer	Charlotte	Gov. Z. B. Vance	1878 to 1880
R. L. Payne, M.D	Lexington	State Society	1881 to 1887
M. Whitehead, M.D., President	Salisbury	State Society	1881 to 1884
S. H. Lyle, M.D	Franklin	Gov. T. J. Jarvis	1881 to 1883
William Cain, Civil Engineer	Charlotte	Gov. T. J. Jarvis	1881 to 1883
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1881 to 1883
J. W. Jones, M.D., President	Wake Forest	State Society	1883 to 1889
John McDonald, M.D	Washington	State Society	1883 to 1889
S. H. Lyle, M.D	Franklin	Gov. T. J. Jarvis	1883 to 1885
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1883 to 1885
Arthur Winslow, Civil Engineer	Raleigh	Gov. T. J. Jarvis	1883 to 1886
R. H. Lewis, M.D	Raleigh	State Board of Health	1884 to 1886
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1885 to 1887
William D. Hilliard, M.D	Asheville	State Society	1885 to 1891
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1885 to 1887
J. H. Tucker, M.D	Henderson	Gov. A. M. Scales	1885 to 1887
R. H. Lewis, M.D., Secretary	Raleigh	State Society	1887 to 1888
H. T. Bahnson, M.D., President	Winston	State Society	1887 to 1888
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1887 to 1889
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1887 to 1889
J. H. Tucker, M.D	Henderson	Gov. A. M. Scales	1888 to 1891
J. L. Ludlow, Civil Engineer	Winston	Gov. A. M. Scales	1888 to 1891
J. H. Tucker, M.D	Henderson	Gov. D. G. Fowle	1888 to 1891
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. D. G. Fowle	1889 to 1893
J. L. Ludlow, Civil Engineer	Winston	Gov. D. G. Fowle	1889 to 1892
J. A. Hodges, M.D	Fayetteville	State Society	1889 to 1893
J. M. Baker, M.D	Tarboro	State Society	1891 to 1893
J. H. Tucker, M.D	Henderson	Gov. T. M. Holt	1891 to 1893
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. T. M. Holt	1891 to 1892
J. L. Ludlow, Civil Engineer	Winston	Gov. T. M. Holt	1891 to 1897
Thomas, F. Wood, M.D., Secretary*	Wilmington	State Society	1892 to 1897
George G. Thomas, M.D., President	Wilmington	State Board of Health	1891 to 1895
S. Westray Battle, M.D	Asheville	State Society	1892 to 1895
W. H. Harrell, M.D	Williamston	State Society	1893 to 1895
John Whitehead, M.D	Salisbury	State Board of Health	1893 to 1895
W. H. G. Lucas	White Hall	Gov. Elias Carr	1893 to 1895
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1893 to 1895
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1893 to 1895
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1894 to 1897
W. P. Beall, M.D	Greensboro	Gov. Elias Carr	1895 to 1897
W. J. Lumsden, M.D	Elizabeth City	Gov. Elias Carr	1895 to 1897
John Whitehead, M.D	Salisbury	State Society	1895 to 1897
W. H. Harrell, M.D	Williamston	State Society	1895 to 1897
W. P. Beall, M.D	Greensboro	Gov. Elias Carr	1895 to 1897
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1895 to 1897
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1897 to 1899
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1897 to 1899
Charles J. O'Hagan, M.D	Greenville	Gov. D. L. Russell	1897 to 1899
John D. Spicer, M.D	Goldsboro	Gov. D. L. Russell	1897 to 1899
J. L. Nicholson, M.D	Richlands	Gov. D. L. Russell	1897 to 1899
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
Charles J. O'Hagan, M.D	Greenville	Gov. D. L. Russell	1899 to 1901
J. L. Nicholson, M.D	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M.D	Wilson	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M.D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M.D	Asheville	State Society	1899 to 1901
H. W. Lewis, M.D	Jackson	State Society	1899 to 1901
H. H. Dodson, M.D	Milton	State Society	1899 to 1901
R. H. Lewis, M.D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M.D	Lenoir	Gov. C. B. Aycock	1901 to 1907
George G. Thomas, M.D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M.D	New Bern	Gov. C. B. Aycock	1901 to 1905

*Died in 1892, leaving a five-year unexpired term, which was filled by the Board

MEMBERS STATE BOARD OF HEALTH—Continued

Name	Address	Appointed by	Term
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1905
S. Westray Battle, M.D.	Asheville	State Society	1901 to 1907
H. W. Lewis, M.D.	Jackson	State Society	1901 to 1907
W. H. Whitehead, M.D.	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M.D.	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1903 to 1909
J. Howell Way, M.D.	Waynesville	Gov. R. B. Glenn	1905 to 1911
W. O. Spencer, M.D.	Winston	Gov. R. B. Glenn	1905 to 1911
George G. Thomas, M.D., President	Wilmington	State Society	1905 to 1911
Thomas E. Anderson, M.D.	Statesville	State Society	1905 to 1911
R. H. Lewis, M.D.	Raleigh	Gov. R. B. Glenn	1907 to 1913
E. C. Register, M. D.	Charlotte	Gov. R. B. Glenn	1907 to 1913
David T. Tayloe, M.D.	Washington	State Society	1907 to 1909
James A. Burroughs, M.D.[1]	Asheville	State Society	1907 to 1913
J. E. Ashcraft, M.D.	Monroe	State Board of Health	1909 to 1913
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. W. W. Kitchin	1909 to 1913
J. Howell Way, M.D., President	Waynesville	Gov. W. W. Kitchin	1911 to 1917
W. O. Spencer, M.D.	Winston-Salem	Gov. W. W. Kitchin	1911 to 1917
Thomas E. Anderson, M.D.	Statesville	State Society	1911 to 1917
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1911 to 1917
R. H. Lewis, M.D.	Raleigh	Gov. Locke Craig	1913 to 1919
Edw. J. Wood, M.D.	Wilmington	Gov. Locke Craig	1913 to 1919
A. A. Kent, M.D.[2]	Lenoir	State Society	1913 to 1915
Cyrus Thompson, M.D.	Jacksonville	State Society	1913 to 1919
Fletcher R. Harris, M.D.	Henderson	State Board of Health	1913 to 1919
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. Locke Craig	1915 to 1921
J. Howell Way, M.D., President	Waynesville	Gov. T. W. Bickett	1917 to 1923
E. C. Register, M.D.[1]	Charlotte	Gov. T. W. Bickett	1917 to 1923
Thomas E. Anderson, M.D.	Statesville	State Society	1917 to 1923
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1917 to 1923
Fletcher R. Harris, M.D.[3]	Henderson	State Society	1919 to 1923
A. J. Crowell, M.D.	Charlotte	Gov. T. W. Bickett	1919 to 1923
Chas. E. Waddell, C.E.[4]	Asheville	Gov. C. Morrison	1921 to 1923
Cyrus Thompson, M.D.	Jacksonville	State Society	1919 to 1925
R. H. Lewis, M.D.	Raleigh	Gov. T. W. Bickett	1919 to 1925
E. J. Tucker, D.D.S.	Roxboro	Gov. T. W. Bickett	1923 to 1925
J. Howell Way, M.D., President	Waynesville	Gov. C. Morrison	1923 to 1929
A. J. Crowell, M.D.	Charlotte	Gov. C. Morrison	1923 to 1929
James P. Stowe, Ph.G.	Charlotte	Gov. C. Morrison	1923 to 1927
D. A. Stanton, M.D.	High Point	State Board of Health	1923 to 1925
Thomas E. Anderson, M.D.	Statesville	State Society	1923 to 1929
Charles O'H. Laughinghouse, M.D.[5]	Greenville	State Society	1923 to 1926
Cyrus Thompson, M.D.[1]	Jacksonville	State Society	1925 to 1931
D. A. Stanton, M.D.	High Point	State Society	1925 to 1931
R. H. Lewis, M.D.[1]	Raleigh	Gov. A. W. McLean	1925 to 1931
Jno. B. Wright, M.D.[6]	Raleigh	Gov. A. W. McLean	1926 to 1931
E. J. Tucker, D.D.S.[6]	Roxboro	Gov. A. W. McLean	1925 to 1931
W. S. Rankin, M.D.[4]	Charlotte	State Board of Health	1926 to 1927
L. E. McDaniel, M.D.	Jackson	State Board of Health	1927 to 1929
Chas. C. Orr, M.D.	Asheville	Gov. A. W. McLean	1927 to 1929
Thomas E. Anderson, M.D.[6]	Statesville	State Society	1929 to 1935
L. E. McDaniel, M.D.[6]	Jackson	State Society	1929 to 1935
James P. Stowe, Ph.G.[6]	Charlotte	Gov. A. W. McLean	1927 to 1933
A. J. Crowell, M.D.[6]	Charlotte	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[6]	Kinston	State Board of Health	1930 to 1931
Chas. C. Orr, M.D.[6]	Asheville	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[5]	Kinston	State Society	1931 to 1935
C. V. Reynolds, M. D.	Asheville	State Society	1931 to 1935
L. B. Evans, M. D.	Windsor	State Society	1931 to 1933
S. D. Craig, M. D.	Winston-Salem	State Society	1931 to 1933
John T. Burrus, M. D.	High Point	Gov. O. Max Gardner	1931 to 1933
J. N. Johnson, D.D.S.	Goldsboro	Gov. O. Max Gardner	1931 to 1933
J. A. Goode, Ph.G.	Asheville	Gov. O. Max Gardner	1931 to 1933
H. L. Large, M.D.	Rocky Mount	Gov. O. Max Gardner	1931 to 1935
H. G. Baity, C.E.	Chapel Hill	Gov. O. Max Gardner	1931 to 1935
Grady G. Dixon, M.D.[7]	Ayden	Ex. Com. State Society	1931 to 1932
Grady G. Dixon, M.D.[7]	Ayden	State Society	1932 to 1935
S. D. Craig	Winston-Salem	State Society	1933 to 1937
W. T. Rainey, M.D.	Fayetteville	State Society	1933 to 1937
J. N. Johnson, D.D.S.	Goldsboro	Gov. J. C. B. Ehringhaus	1933 to 1937
Hubert B. Haywood, M.D.	Raleigh	Gov. J. C. B. Ehringhaus	1933 to 1937
James P. Stowe, Ph.G.	Charlotte	Gov. J. C. B. Ehringhaus	1933 to 1937
Grady G. Dixon, M.D.	Ayden	State Society	1935 to 1939
J. LaBruce Ward, M.D.	Asheville	State Society	1935 to 1939
H. Lee Large, M.D.	Rocky Mount	Gov. J. C. B. Ehringhaus	1935 to 1939
H. G. Baity, C.E.	Chapel Hill	Gov. J. C. B. Ehringhaus	1935 to 1939

[1]Died leaving unexpired term. [2]Resigned to become member of General Assembly.
[3]Resigned to become Health Officer Vance County. [4]Resigned.
[5]Resigned to become Secretary of State Board of Health.
[6]Term terminated account reorganization State Board of Health by General Assembly.
[7]To fill vacancy caused by resignation of Dr. J. M. Parrott.

STATUS OF SOCIETY MEMBERSHHIP BY COUNTIES FOR YEARS 1922-1936

County	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Alamance-Caswell *a*	31	27	27	25	27	30	30	32	33	33	32	29	32	30	31
Alexander *b*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alleghany *n*	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anson	2	12	12	11	10	6	8	8	6	6	4	4	9	7	8
Ashe *p*	9	8	6	10	6	8	6	5	5	5	4	.....	.....	7	.....
Avery *r*	4	5	5	5	5	6	6	6	5	5	5	.....	5	5	5
Beaufort	14	17	14	17	17	17	17	16	18	15	15	12	13	15	10
Bertie	12	10	9	9	8	8	8	6	7	9	7	8	9	11	9
Bladen	7	4	3	8	7	8	8	8	8	8	8	5	6	6	6
Brunswick	1	1	1	1	1	1	4	6	2	2	2	2	2	3	2
Buncombe	96	99	105	97	102	118	120	118	113	112	105	83	107	115	106
Burke	11	15	13	14	11	11	12	12	17	17	17	17	12	10	13
Cabarrus	21	23	19	21	21	22	27	27	23	20	20	10	14	21	8
Caldwell	12	12	10	11	14	15	15	13	15	14	12	9	12	12	12
Camden *c*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carteret	8	12	10	10	12	12	11	11	12	12	12	12	12	11	12
Caswell *d*	1	1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	.....
Catawba	22	20	19	16	16	21	16	17	13	13	16	8	16	16	16
Chatham	6	7	9	9	7	9	8	9	9	4	3	2	3	2	0
Cherokee	10	10	9	10	9	8	10	10	10	9	8	5	8	8	8
Chowan-Perquimans	6	7	8	5	9	10	9	7	8	6	7	6	7	5	4
Clay *e*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	19	18	18	17	19	20	20	22	23	19	22	21	20	21	22
Columbus	9	14	11	12	14	15	14	14	15	10	8	8	10	11	10
Craven	8	10	12	14	16	17	15	14	13	13	14	9	5	10	6
Cumberland	23	22	32	31	28	29	28	22	26	23	21	27	27	27	21
Currituck *s*	5	4	4	4	4	3	2	1	1	1	1	.....	.....	.....	.....
Dare *f*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davidson	18	18	22	20	19	19	18	17	16	17	17	17	20	23	19
Davie	4	6	4	5	4	5	5	5	5	5	6	4	2	1	1
Duplin	11	12	12	13	13	13	9	11	9	11	7	2	2	9	2
Durham-Orange	43	43	47	53	60	64	63	65	67	76	77	76	76	85	87
Edgecombe-Nash	15	12	10	11	12	12	12	7	10	43	39	25	46	49	32
Forsyth	60	59	62	63	64	66	74	59	70	66	69	70	73	77	77
Franklin	12	12	12	12	12	10	12	11	10	9	7	7	9	8	9
Gaston	39	40	40	39	40	38	39	39	36	33	37	12	28	30	21
Gates	.....	1	1	1	.....	.....	1	2	2	2	2	2	2	2	2
Graham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Granville	14	12	13	13	12	12	14	13	13	13	12	10	10	11	10
Greene	7	5	6	5	5	5	5	5	5	5	5	5	6	5	6
Guilford	80	87	93	107	112	119	123	130	124	124	118	91	102	99	83
Halifax	24	18	21	20	16	14	17	17	16	15	14	13	15	18	17
Harnett	16	15	15	13	12	16	16	15	14	13	15	16	14	15	10
Haywood	12	13	13	14	14	13	8	14	14	12	13	15	20	19	21
Henderson *j*	.....	.....	.....	.....	17	19	16	16	19	14	12	9	17	17	13
Henderson-Polk *g*	13	13	13	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hertford	10	10	10	8	8	7	7	6	5	5	5	6	7	7	4
Hoke	6	8	9	11	10	11	12	14	14	14	12	11	13	14	13
Hyde	2	1	2	1	1	1	1	1	1	1	1	.....	1	1	0
Iredell-Alexander	20	19	20	26	29	34	37	39	38	38	39	29	38	38	39
Jackson	6	6	8	7	7	6	5	6	6	3	7	2	4	7	4
Johnston	26	25	25	24	28	24	23	18	23	25	20	19	19	21	12
Jones	1	2	1	4	4	3	3	3	3	3	3	3	3	3	3
Lee	10	10	11	13	13	13	14	16	13	11	13	10	10	10	3
Lenoir	20	17	20	18	20	22	23	20	22	17	19	20	22	20	22
Lincoln	13	14	16	11	11	12	13	14	13	10	12	12	13	11	8
Macon-Clay	7	7	7	6	8	8	9	6	8	4	3	2	5	3	5
Madison	8	11	11	11	11	5	12	7	5	3	4	5	4	4	1
Martin *t*	12	13	10	10	10	10	10	10	8	7	4	.....	.....	.....	.....
Martin-Washington-Tyrrell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	10	12	10
McDowell	5	6	7	8	7	8	7	9	12	10	10	11	10	13	10
Mecklenburg	110	115	109	121	117	104	119	125	128	124	117	104	108	116	116
Mitchell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	3
Mitchell-Avery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....
Mitchell-Watauga	10	10	7	7	8	7	9	8	6	5	5	.....	.....	.....	.....
Montgomery	10	9	9	8	9	9	10	11	9	10	9	7	9	9	8
Moore	21	20	20	19	21	17	20	22	17	21	21	18	22	21	19
Nash *m*	30	30	33	34	32	31	30	30	33	.....	.....	.....	.....	.....	.....
New Hanover	51	46	44	42	40	41	38	32	38	37	35	25	35	39	34
Northampton	11	10	10	10	11	9	9	6	3	4	5	4	8	4	4
Onslow	7	5	6	6	5	5	6	5	5	5	6	6	6	5	2
Orange *h*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pamlico	5	5	4	5	5	5	5	5	4	4	4	4	4	4	4
Pasquotank-Camden-Currituck-Dare	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	14	12	11

STATUS OF MEMBERSHIP BY COUNTIES—Continued

County	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Pasquotank-Camden-Dare	19	18	17	18	19	18	16	14	17	14	11	.....	.....	.....	.....
Pender	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0
Perquimans *i*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Person	10	10	10	8	7	7	7	6	6	6	6	7	7	8	7
Pitt	24	23	24	26	24	26	31	24	27	27	20	14	22	26	24
Polk *j*	.....	.....	.....	.....	·5	6	6	6	6	5	7	7	6	6	4
Randolph	14	14	13	14	12	10	11	10	8	7	14	10	11	13	10
Richmond	13	14	16	19	18	18	18	14	17	17	15	16	15	16	15
Robeson	33	27	29	30	31	28	28	21	24	21	22	23	25	27	28
Rockingham	25	21	23	26	23	24	21	20	24	24	21	22	23	21	18
Rowan	32	32	36	40	40	40	42	35	35	39	33	24	34	30	27
Rutherford	18	22	21	21	22	24	22	22	22	21	21	19	20	21	23
Sampson	12	13	17	15	14	13	13	10	13	13	14	14	14	14	14
Scotland	12	12	12	12	12	12	12	12	10	11	11	11	11	11	10
Stanly	11	12	15	14	13	15	14	14	16	15	13	12	16	17	18
Stokes	12	9	10	10	5	7	8	6	2	6	6	1	1	1	0
Surry *v*	25	24	26	22	17	20	22	20	20	13	17	12	.....	.....	.....
Surry-Yadkin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	22	17
Swain	4	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	3	0	4
Transylvania	5	6	4	8	4	5	7	4	2	2	1	3	2	2	2
Tyrrell *k*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union	17	18	18	19	19	16	16	14	13	10	9	10	10	11	10
Vance	10	10	12	11	12	11	11	11	12	8	7	8	9	9	8
Wake	76	85	73	78	79	78	80	84	94	87	86	87	89	88	89
Warren	7	7	6	6	6	6	6	6	6	6	6	5	5	6	2
Washington-Tyrrell *u*	9	9	9	8	8	6	6	5	3	3	3	.....	.....	.....	.....
Watauga *l q*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Watauga-Ashe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	5	6	5
Wayne	33	32	29	32	34	32	38	38	38	30	32	22	27	29	27
Wilkes *o*	10	10	10	10	9	14	11	10	10	11	10	.....	.....	.....	.....
Wilkes-Alleghany	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	13	10	14
Wilson	28	31	31	32	34	34	35	31	28	28	22	21	25	29	31
Yadkin *v*	4	3	2	3	2	2	3	5	10	.....	4	1	.....	.....	.....
Yancey	1	1	1	1	2	7	5	3	4	1	1	.....	5	4	1
Totals	1571	1592	1606	1657	1666	1691	1738	1669	1694	1600	1559	1363	1563	1619	1462

a The figures for 1926 are for Alamance-Caswell; for the other years, for Alamance only; *b* See Iredell-Alexander; *c* See Pasquotank-Camden-Dare; *d* For 1926, see Alamance-Caswell; *e* See Macon-Clay; *f* See Pasquotank-Camden Dare; *g* See Henderson or Polk for years after 1925; *h* See Durham-Orange; *i* See Chowan-Perquimans; *j* See Henderson-Polk for 1912-1925; *k* See Washington-Tyrrell; *l* See Mitchell-Watauga; *m* See Edgecombe-Nash for 1931; for the other years Edgecombe only; *n* See Wilkes-Alleghany; *o* See Wilkes-Alleghany; *p* See Watauga-Ashe; *q* See Watauga-Ashe; *r* See Mitchell-Avery; *s* See Pasquotank-Camden-Currituck-Dare; *t* See Martin-Washington-Tyrrell; *u* See Martin-Washington-Tyrrell; *v* See Surry-Yadkin.

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Abel, J. F.....Waynesville
Abernathy, H. N.....Charlotte
*Achorn, John W.....Pinebluff
*Adams, C. A.....Durham
*Adams, Charles E.....Gastonia
*Adams, M. R.....Statesville
*Alexander, Annie L.....Charlotte
Alexander, Jas. R.....Charlotte
Allen, Jos. A.....New London
*Allen, Rufus L.....Waynesville
*Alston, B. P.....Epsom
*Ambler, C. P.....Asheville
Anders, McT. G.....Gastonia
*Anderson, Albert .....Raleigh
Anderson, Chas. A.....Burlington
*Anderson, Thos. Eli.....Statesville
Anderson, Wade H.....Wilson
*Archery, L. M.....Concord
*Asbury, F. E.....Asheboro
Ashecraft, J. E.....Fayetteville
Ashworth, Benj. L.....Marion
Ashworth, W. C.....Greensboro
*Attmore, Geo. S.....Stonewall
*Averitt, K. G.....Cedar Creek
Aydlette, Jos. P.....Earl
*Bahnson, H. T.....Winston-Salem
*Baker, J. M.....Tarboro
Banner, Chas. W.....Greensboro
Basnight, Thos. G.....Stokes
*Barrier, P. A.....Mt. Pleasant
Bass, H. H.....Henderson
Battle, J. T. J.....Greensboro
*Battle, Kemp P.....Raleigh
*Battle, S. W.....Asheville
*Beall, Wm. P.....Greensboro
Bell, A. E.....Mooresville
Bellamy, Robert H.....Wilmington
*Bellamy, W. J. H.....Wilmington
*Blair, A. McNiel.....Southern Pines
*Boddie, N. P.....Durham
*Bolton, Mahlon.....Rich Square
Bonner, K. P. B.....Morehead City
Boone, W. H.....Durham
*Booth, Samuel D.....Oxford
Bowman, H. P.....Greensboro
Brown, G. A.....Mt. Ulla
Brown, G. W.....Raeford
Brown, J. P.....Fairmont
Brown, J. S., Sr.....Hendersonville
*Brownson, W. C.....Asheville
Buffaloe, J. S.....Garner
*Bullock, D. W.....Wilmington
Bullock, Thomas C.....Autryville
*Burrus, John T.....High Point
Burt, B. W.....Holly Springs
Burt, S. P.....Louisburg
Byerly, Andrew B.....Cooleemee
*Bynum, John .....Winston-Salem
*Caldwell, D. G.....Concord
Carlton, R. L.....Winston-Salem
*Carroll, E. D. Dixon.....Raleigh
Caviness, Zebulon M.....Raleigh
*Cheatham, Archibald .....Durham
Cheesborough, Thos. P.....Asheville
*Clark, G. L..... .....Clarkton
Clement, E. B.....Salisbury
Cobb, Wm. H., Jr.....Goldsboro
Cooper, Geo. M.....Raleigh
Cotton, Clyde E.....Asheville
*Council, J. B.....Salisbury
*Covington, J. M.....Wadesboro
Cox, E. L.....Jacksonville
Cranmer, J. B.....Wilmington
*Croom, J. D.....Maxton
Crowell, A. J.....Charlotte
Crowell, L. A.....Lincolnton
Daligny, Charles .....Troy
*Dalton, David N.....Winston-Salem
Dalton, Wm. N.....Winston-Salem
Daniels, O. C.....Oriental
Davis, Thomas W.....Winston-Salem
Davidson, John E. S.....Charlotte
DeArmon, J. McC.....Charlotte
*Denny, Wm. W.....Pink Hill
Dickinson, E. T.....Wilson
*Dillard, Richard, Jr.....Edenton
Dixon, Guy E.....Hendersonville
*Dixon, Wm. H.....Ayden
*Dodson, H. H.....Greensboro
*Duffy, Charles .....New Bern
*Duffy, Francis.....New Bern
*Eddleman, H. M.....Gastonia
*Edgerton, Jas. L.....Hendersonville
*Edwards, G. C.....Hookerton
Edwards, J. D.....Siler City
Eller, A. J.....Wilkesboro

*Deceased.

Ellis, R. C. ..... Shelby
Evans, L. B. ..... Windsor
Everett, A. C. ..... Rockingham
*Faison, I. W. ..... Charlotte
*Faison, Wm. W. ..... Goldsboro
Fearing, Isaiah ..... Elizabeth City
*Fletcher, M. H. ..... Asheville
Flippin, J. M. ..... Pilot Mountain
Flippin, Samuel T. ..... Siloam
Fortune, Alex F. ..... Greensboro
*Fox, M. F. ..... Guilford College
*Freeman, Richard A. ..... Burlington
Galloway, W. C. ..... Wilmington
Garren, R. H. ..... Monroe
Garrison, David A. ..... Gastonia
Gibbon, Robert L. ..... Charlotte
*Gilmer, Chas. S. ..... Greensboro, R. 6
Gilreath, Frank H. ..... N. Wilkesboro
Glascock, Joy H. ..... Greensboro
Glenn, Lucius N. ..... Gastonia
*Goley, Wm. R. ..... Graham
Goodman, A. B. ..... Lenoir
*Goodman, E. G. ..... Lanvale
*Goodman, A. W. ..... Raleigh
*Gouger, Geo. J. ..... Concord
Gove, Anna M. ..... Greensboro
Grady, James C. ..... Kenly
Grady, Wm. Earle ..... Tryon
*Graham, Joseph ..... Charlotte
*Graham, Wm. A. ..... Charlotte
*Griffin, J. A. ..... Clayton
Griggs, W. T. ..... Poplar Branch
Halford, J. W. ..... Lillington
*Hall, Wright ..... Wilmington
*Halsey, B. F. ..... Roper
Hardy, Ira M. ..... Kinston
*Hargrove, R. H. ..... Robersonville
Harrill, L. B. ..... Caroleen
*Harris, F. R. ..... Henderson
*Harriss, I. A. ..... Weaverville
Harrison, Edmund ..... Greensboro
Harris, A. H. ..... Wilmington
Hathcock, Thos. A. ..... Norwood
Hays, Benj. K. ..... Oxford
*Haywood, F. J. ..... Raleigh
*Haywood, Hubert, Sr. ..... Raleigh
*Herring, B. S. ..... Wilson
Hicks, Calvin S. ..... Durham
Hicks, I. F. ..... Dunn
*Hicks, Romeo ..... Henrietta
*Hicks, Wm. N. ..... Durham
Highsmith, Chas. ..... Dunn
Highsmith, J. F. ..... Fayetteville
Highsmith, Seavy ..... Fayetteville
*Hill, L. H. ..... Germantown
Hill, Wm. I. ..... Albemarle
Holloway, Robt. L. ..... West Durham
Holt, Wm. P., Sr. ..... Erwin
*Holt, Wm. T. ..... Greensboro
*Hooks, Thel ..... Smithfield
Hoover, C. H. ..... Crouse
Horton, W. C. ..... Raleigh
Houck, Albert F. ..... Lenoir
Houser, E. A. ..... Shelby
Hovis, Leighton W. ..... Charlotte
Hubbard, C. C. ..... Farmer
*Hudson, Wm. L. ..... Dunn
*Hughes, Francis W. ..... New Bern
Hunter, L. W. ..... Charlotte
Ingram, Chas. B. ..... Mt. Gilead
*Irwin, J. R. ..... Charlotte
*Jenkins, Chas. L. ..... Raleigh
Jewett, Robert D. ..... Wilmington
John, Peter ..... Laurinburg
Johnson, N. M. ..... Durham
Johnson, Thos. C. ..... Lumberton
Jonas, John F. ..... Marion
*Jones, Clara E. ..... Goldsboro
*Jones, A. G. ..... Walnut Cove
Jones, W. M. ..... Greensboro
*Jordan, Chas. S. ..... Asheville
*Jordan, T. M. ..... Raleigh
Judd, J. M. ..... Varina
*Julian, Charles A. ..... Greensboro
*Kapp, Henry H. ..... Winston-Salem
Kent, Alfred A. ..... Winter Park, Fla.
Kerr, J. Edwin ..... Winston-Salem
King, Parks M. ..... Charlotte
King, Richard M. ..... Concord
Kirby, Guy S. ..... Marion
Kirk, W. R. ..... Hendersonville
Kinsman, Henry ..... Hamlet
*Knight, J. B. H. ..... Williamston
Knight, Wm. P. ..... Greensboro
Kornegay, Lemuel W. ..... Rocky Mount
*Knox, A. W. ..... Raleigh
Koonce, S. E. ..... Wilmington
Lafferty, Robt. H. ..... Charlotte
Lamm, Isaac W. ..... Raleigh
Lattimore, E. B. ..... Shelby

*Deceased.

*Laughinghouse, Chas. O'H.....Raleigh
Ledbetter, James McQ.....Rockingham
Lee, Lawrence V.....Lattimore
*Leggett, Kenelm .....Hobgood
*Lewis, Geo. W.....Wilson
Lewis, H. W.....Jackson
*Lewis, R. H.....Raleigh
Lilly, Jas. M.....Fayetteville
Linville, A. Y.....Winston-Salem
*Lockett, Everett A.....Winston-Salem
*Long, Benj. L.....Hamilton
*Long, Geo. W.....Graham
Long, H. F.....Statesville
Long, J. W.....Greensboro
Love, Bedford E.....Roxboro
*Love, W. J.....Wilmington
*Lyle, S. H.....Franklin
MacFadyen, Paul R..... Concord
McAnally, W. J.....High Point
McBrayer, L. B.....Southern Pines
McCain, Wm. R.....High Point
McCampbell, John .....Morganton
McCracken, C. M.....Fairview
McCracken, J. R.....Waynesville
*McDonald, A. D.....Wilmington
McGeachy, R. S.....Weldon
McGee, J. W.....Raleigh
McGehee, John Wm.....Reidsville
McIver, Lynn .....Sanford
*McKay, A. M.....Summerville
*McKay, John A.....Buies Creek
McKay, Joseph F.....Buies Creek
*McKee, James .....Raleigh
*McKenzie, W. W.....Salisbury
McLaughlin, C. S.....Charlotte
McLaughlin, J. E.....Statesville
McLean, John W.....Godwin
McLeod, A. H.....Aberdeen
*McMillan, Benj. F.....Red Springs
*McMillan, J. D.....Lumberton
*McMillan, J. L.....Red Springs
*McMillan, W. D.....Wilmington
*McNeill, J. W.....Fayetteville
*McNeill, Wm. M.....Buies Creek
McPhail, L. D.....Charlotte
McPherson, S. D.....Durham
Malloy, S. A.....Yanceyville
Manning, I. H.....Chapel Hill
*Manning, J. M.....Chapel Hill
Mariner, N. B.....Belhaven
Matheson, James P.....Charlotte
Matthews, Jas. O.....Clinton
Matthews, M. L.....Sanford
Meadows, W. J.....Greensboro
Mebane, W. C.....Wilmington
Melvin, Wayman C.....Linden
Menzies, H. C.....Hickory
*Michaux, E. R.....Greensboro
*Miller, J. F.....Goldsboro
Miller, Robert B.....Goldsboro
*Minor, Chas. L.....Asheville
*Misenheimer, C. A.....Charlotte
*Misenheimer, Theo. F.....Morven
Monk, Henry L.....Salisbury
*Monroe, W. A.....Sanford
*Montgomery, John C.....Charlotte
Moore, C. E.....Wilson
*Moore, Edwin G.....Elm City
Morris, J. A.....Oxford
Moseley, Chas. W.....Greensboro
Munroe, J. P.....Charlotte
*Murphy, John G.....Wilmington
Murphy, W. B.....Snow Hill
Myers, John Q.....Charlotte
Nalle, B. C.....Charlotte
Neal, John W.....Monroe
Nelson, R. J.....Robersonville
Newell, H. A.....Henderson
Nichols, Rhodes E.....Durham
*Nicholson, J. L.....Richland
Nicholson, P. A.....Washington
*Nicholson, Sam T.....Washington
Nisbet, W. O.....Charlotte
*Noble, R. J.....Selma
Nobles, Jos. E.....Greenville
Orr, Charles C.....Asheville
Orr, Porter B.....Asheville
Paddison, John R.....Kernersville
Parker, G. E.....Benson
*Parrott, J. M.....Kinston
Parrott, Wm. Thomas.....Kinston
*Pate, Wm. T.....Gibson
Patterson, Jos. F.....New Bern
Peeler, John H.....Salisbury
*Pemberton, Wm. D.....Concord
Person, James B., Jr.....Selma
*Perry, M. P..... Macon
Petrie, Robt. Wm.....Murphy
Pfohl, Samuel F.....Winston-Salem
*Pharr, T. F.....Concord

*Deceased.

*Pharr, Wm. W. ..... Charlotte
*Phillips, Matthew D. ..... Dalton
Pickett, John A. ..... Burlington
*Picot, L. J. ..... Littleton
*Pope, Henry T. ..... Lumberton
Pressly, G. W. ..... Charlotte
*Prince, D. M. ..... Laurinburg
*Quickel, Thos. C. ..... Gastonia
Rankin, W. S. ..... Charlotte
Ray, John B. ..... Leaksville
Ray, O. L. ..... Raleigh, Rt. 1
Redding, Alex H. ..... Asheboro
*Register, Edw. C. ..... Charlotte
Register, F. M. ..... Kinston
Reid, Geo. P. ..... Forest City
Reitzel, Claude E. ..... High Point
Reynolds, C. V. ..... Asheville
Ricks, Leonard E. ..... Fairmont
Riddle, J. B. ..... Morganton
*Ritter, F. W. ..... Moyock
*Roberson, Chas. ..... Greensboro
Rodman, J. C. ..... Washington
*Rodwell, J. W. ..... Mocksville
Rogers, Jas. Rufus ..... Raleigh
Rogers, Wiley A. ..... Franklin
Ross, Geo. H. ..... East Durham
Royall, M. A. ..... Elkin
Royster, H. A. ..... Raleigh
Royster, S. S. ..... Shelby
*Royster, W. I. ..... Raleigh
Salley, E. McQueen ..... Hendersonville
Sawyer, C. J. ..... Windsor
Sawyer, W. W. ..... Elizabeth City
*Schaub, O. P. ..... Winston-Salem
*Schonwald, J. T. ..... Wilmington
*Sevier, D. E. ..... Asheville
Sevier, J. T. ..... Asheville
*Schaffner, J. F., Sr. ..... Winston-Salem
*Shamburger, J. B. ..... Star
Sharpe, Frank L. ..... Statesville
*Shaw, W. G. ..... Wagram
Shields, H. B. ..... Carthage
Sikes, G. L. ..... Salemburg
*Sikes, G. T. ..... Creedmoor
Skinner, Louis C. ..... Greenville
Slate, John S. ..... Winston-Salem
*Smith, J. B. ..... Pilot Mountain
*Smith, R. A. ..... Goldsboro
Smithwick, Jas. E. ..... Jamesville
Smoot, J. E. ..... Concord
*Snipes, E. P. ..... Jonesboro
Spainhour, Ellis H. ..... Winston-Salem
*Speight, R. H., Sr. ..... Whitakers
Spencer, W. O. ..... Winston-Salem
*Stamps, Thos. ..... Lumber Bridge
Stanton, D. A. ..... High Point
*Stevens, J. A. ..... Clinton
Stevens, M. L. ..... Asheville
*Stewart, H. D. ..... Monroe
Stokes, Jas. Ernest ..... Salisbury
Street, M. E. ..... Glendon
Strickland, Edw. F. ..... Winston-Salem
Stringfield, Thos. ..... Waynesville
*Strong, Chas. Moore ..... Charlotte
*Summerell, E. M. ..... China Grove
*Summers, Chas. L. ..... Baltimore, Md. (Forsyth Co.)
Swann, Jos. F. ..... Gastonia
*Tayloe, D. T., Sr. ..... Washington
*Taylor, I. M. ..... Morganton
Taylor, Wm. L. ..... Oxford
Tennent, G. S. ..... Asheville
*Thomas, G. G. ..... Wilmington
Thompson, Alex. Frank ..... Troy
Thompson, C. D. ..... High Point
*Trantham, H. T. ..... Salisbury
Tucker, John Hill ..... Charlotte
*Tull, Henry ..... Kinston
*Turner, J. P. ..... Greensboro
*Van Poole, C. M. ..... Salisbury
Vestal, W. J. ..... Lexington
*Von Ruck, Karl ..... Asheville
Walker, H. D. ..... Elizabeth City
*Ward, W. H. ..... Plymouth
*Way, J. Howell ..... Waynesville
Weaver, H. B. ..... Asheville
Weaver, W. J. ..... Asheville
Webb, B. G. ..... Andrews
Wessell, Jno. C. ..... Wilmington
West, Robt. M. ..... Salisbury
*Wharton, L. D. ..... Smithfield
Whisnant, A. M. ..... Charlotte
*Whitaker, R. A. ..... Kinston
*White, J. W. ..... Wilkesboro
*Whitehead, John ..... Salisbury
*Whitehead, W. H. ..... Rocky Mount
Whitfield, Wm. Cobb ..... Salisbury
*Whittington, W. P. ..... Asheville
Whittington, Wm. W. ..... Snow Hill
Wilkins, S. A. ..... Dallas

*Deceased.

Willcox, J. W.....West End
Williams, Albert F.....Wilson
Williams, John D.....Guilford Station
*Williams, J. H.....Asheville
Wilson, A. R.....Greensboro
*Wilson, Robt. B.....Newton Grove
Wood, J. W.....Boiling Springs
Wright, Jno. B.....Raleigh
Yarborough, Richard F.....Louisburg
*Young, R. S.....Concord

HONORARY MEMBERS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

*L. McL. Tiffany.....Baltimore, Md.
*W. W. Keen.....Philadelphia, Pa.
J. Allison Hodges.....Richmond, Va.
*R. L. Payne.....Norfolk, Va.
*J. N. McCormack.....Bowling Green, Ky.
R. L. Payne, Jr.....Norfolk, Va.
*J. L. Ludlow, C.E.....Winston-Salem
Paul V. Anderson.....Richmond, Va.
Stuart McGuire.....Richmond, Va.
William J. Mayo.....Rochester, Minn.
William Seaman Bainbridge.....New York, N. Y.
William Sharpe.....New York, N. Y.
William McKim Marriott.....St. Louis, Mo.
James K. Hall.....Richmond, Va.

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*Deceased.

MOORE COUNTY MEDICAL SOCIETY MEDAL

In 1927 the Moore County Medical Society kindly put up enough money, the interest from which would pay for a medal to be given for the best paper read before the meeting each year. No one is eligible to receive this medal except Fellows of the Medical Society of the State of North Carolina in good standing; no invited guest is allowed to compete.

Each Section Chairman selects a committee of three to pass on the best paper written in their section. These six papers are then turned over to the State Committee who pass on the best of the six papers, the winner in this instance to receive the medal. The following Fellows have been awarded this medal:

1928—Dr. Paul Pressly McCain.....Sanatorium
"The Diagnosis and Significance of Juvenile Tuberculosis"
(From Section on Pediatrics)

1929—Dr. A. B. Holmes.....Fairmont
"The Treatment of Uremia"
(From Section on Chemistry, Materia Medica and Therapeutics)

1930—Dr. C. T. Smith and Dr. W. Bernard Kinlaw.....Rocky Mount
"The Clinical Consideration of Anaemia of Pregnancy and of Puerperium"
(From Section on Practice of Medicine)

1931—Dr. F. C. Smith.....Charlotte
"Practical Value of Perimetry in Intracranial Conditions; Case Reports" (tumors, vascular disease, toxemia, syphilis and trauma)
(From Section on Eye, Ear, Nose and Throat)

1932—Dr. Charles I. Allen.....Wadesboro
"An Improved Splint for Treating Fractures of the Lower Extremity Showing Reduction and Skeletal Distraction Attachments"
(From Section on Surgery)

1933—Dr. H. F. Sloan.....Charlotte
"Some General Remarks about Cataract Surgery, with report of 100 consecutive uncomplicated Cataract Operations"
(From Section on Ophthalmology and OtoLaryngology)
Dr. J. R. Adams.....Charlotte
"Hypo-glycaemia in Children"
(From Section on Pediatrics)

1934—Dr. Fred E. Motley.....Charlotte
"Complications of Mastoiditis with Special Reference to Septicemia"
(From Section on Ophthalmology and OtoLaryngology)

1935—Dr. Arthur H. London.....Durham
"The Composition of an Average Pediatrics Practice"
(From Section on Pediatrics)

OFFICERS, 1935-1936

OFFICERS, 1935-36

President—Dr. Paul H. Ringer ..... Asheville
President-elect—Dr. C. F. Strosnider ..... Goldsboro
First Vice-President—Dr. J. K. Pepper ..... Winston-Salem
Second Vice-President—Dr. E. S. Bulluck ..... Wilmington
Secretary-Treasurer—Dr. L. B. McBrayer, 1935-1937 ..... Southern Pines

OFFICERS, 1936-37

President—Dr. C. F. Strosnider ..... Goldsboro
President-elect—Dr. Wingate M. Johnson ..... Winston-Salem
First Vice-President—Dr. C. A. Woodard ..... Wilson
Second Vice-President—Dr. John F. Brownsberger ..... Fletcher
Secretary-Treasurer—Dr. L. B. McBrayer, 1936-1937 ..... Southern Pines

COUNCILLORS, 1934-1937

First District—Dr. C. B. Williams ..... Elizabeth City
Second District—Dr. K. B. Pace ..... Greenville
Third District—Dr. J. F. Robertson ..... Wilmington
Fourth District—Dr. E. S. Boice ..... Rocky Mount
Fifth District—Dr. Roscoe D. McMillan ..... Red Springs
Sixth District—Dr. W. M. Coppridge ..... Durham
Seventh District—Dr. Forest M. Houser ..... Cherryville
Eighth District—Dr. R. C. Mitchell ..... Mount Airy
Ninth District—Dr. J. R. Terry ..... Lexington
Tenth District—Dr. G. W. Murphy ..... Asheville

CHAIRMEN OF SECTIONS, 1936-1937

Public Health and Education—Dr. A. C. Bulla ..... Raleigh
Surgery—Dr. J. D. Highsmith ..... Fayetteville
Ophthalmology and OtoLaryngology—Dr. Frank Smith ..... Charlotte
Gynecology and Obstetrics—Dr. W. Z. Bradford ..... Charlotte
Pediatrics—Dr. Arthur H. London, Jr. ..... Durham
Practice of Medicine—Dr. George Mitchell ..... Wilson

DELEGATES TO AMERICAN MEDICAL ASSOCIATION

Dr. Wingate M. Johnson, 1937 ..... Winston-Salem
Dr. W. T. Rainey, Alternate ..... Fayetteville
Dr. John Q. Myers, 1937-38 ..... Charlotte
Dr. M. L. Stevens, Alternate ..... Asheville

DELEGATES TO MEDICAL SOCIETY OF VIRGINIA

Dr. W. H. C. White ..... Elizabeth City
Dr. T. W. M. Long ..... Roanoke Rapids
Dr. J. G. Raby ..... Tarboro
Dr. Floyd Wooten ..... Kinston

DELEGATES TO SOUTH CAROLINA MEDICAL ASSOCIATION

Dr. J. B. Sidbury ..... Wilmington
Dr. Oren Moore ..... Charlotte
Dr. I. Thurman Mann ..... High Point

COMMITTEES

Medical Society Foundation

Dr. John Q. Myers, 5 years.....Charlotte
Dr. W. S. Rankin, 4 years.....Charlotte
Dr. Reid Patterson, 3 years.....Charlotte
Dr. J. B. Sidbury, 2 years.....Wilmington
——————, 1 year .....

Obituaries

Dr. J. F. Abel, *Chairman*.....Waynesville
Dr. J. P. Matheson.....Charlotte

Legislation

Dr. Benj. J. Lawrence, *Chairman*.....Raleigh
Dr. J. F. Highsmith, Sr.....Fayetteville
Dr. W. D. James.....Hamlet

Moore County Medical Society Medal

Dr. W. C. Mudgett, *Chairman*.....Southern Pines
Dr. Deryl Hart.....Durham
Dr. Wm. deB. MacNider.....Chapel Hill

Hospitals

Dr. J. F. Highsmith, Sr.....Fayetteville
Dr. I. M. Procter.....Raleigh
Dr. James W. Davis.....Statesville

Cancer

Dr. H. B. Ivey, *Chairman*.....Goldsboro
Dr. C. C. Carpenter.....Wake Forest
Dr. Thos. L. Lee.....Kinston

Public Relations

Dr. D. W. Holt, *Chairman*.....Greensboro
Dr. L. B. McBrayer.....Southern Pines
Dr. R. B. McKnight.....Charlotte

Advisory to Industrial Commission

Dr. Donnell B. Cobb, *Chairman*.....Goldsboro
Dr. Battle A. Hocutt.....Clayton
Dr. F. C. Smith.....Charlotte

Finance

Dr. Vance P. Peery, *Chairman*.....Kinston
Dr. Julian A. Moore.....Asheville
Dr. W. M. Coppridge.....Durham

Printing

Dr. L. B. McBrayer, *ex-officio Chairman*.....Southern Pines
Dr. J. W. Dickie.....Southern Pines
Dr. E. C. Judd.....Raleigh

Post-Graduate Medical Study

Dr. R. H. Hardin, *Chairman*.....Banners Elk
Dr. James W. Vernon.....Morganton
Dr. C. L. Sherrill.....Statesville

Member Advisory Committee on Maternity and Infancy for the Children's Bureau

Dr. Paul F. Whitaker.....Kinston

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA

1932-1938

Dr. F. Webb Griffith, *President*.....Asheville
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Dr. Ben F. Royal.....Morehead City
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Dr. B. C. Willis (From Hospital Association).....Rocky Mount
Dr. H. A. Newell (From Medical Society 1936-1938).....Henderson

ARRANGEMENTS

Dr. L. B. McBrayer, *Chairman*.....Southern Pines
Place of Meeting.....Winston-Salem
Date.....May 3, 4, 5, 1937
Headquarters.....Robert E. Lee Hotel

PROGRAM OF GENERAL SESSIONS

FIRST GENERAL SESSION

TUESDAY, MAY 5TH, 9:30 A. M.
(Ball Room Battery Park Hotel)

1. Call to Order, Dr. J. LaBruce Ward, Chairman, Committee on Arrangements.
2. Announcements, Dr. J. LaBruce Ward.
3. Presentation of the President, Dr. Paul H. Ringer, Asheville.
4. President's Address, Dr. Paul H. Ringer, Asheville.
5. Presentation President's Jewel to Dr. Paul H. Ringer by President-elect, Dr. C. F. Strosnider, Goldsboro.
6. Report of Committee on Award of Moore County Medical Society Medal for Best Paper read at 1935 Session and Presentation of Medal—
   Dr. W. C. Mudgett, Southern Pines
   Dr. Wm. deB. MacNider, Chapel Hill
   Dr. Deryl Hart, Durham
7. Report Obituary Committee
   Dr. C. A. Woodard, Wilson
   Dr. J. F. Abel, Waynesville
8. Address (Guest Speaker) Dr. Milton J. Rosenau, Dean, School of Public Health, Chapel Hill, N. C. "Pneumonia." From Section on Public Health and Education.
9. Cobb, Dr. Donnell B., "Surgical Significance of Meckel's Diverticulum with Particular Reference to the Occurrence of Peptic Ulcer."
   (From Section on Surgery)
10. Address (Guest Speaker) Dr. Irvin Abell, Louisville, Ky., Past President Southern Medical Association. "Relation of Diabetes to Surgery."
11. Address (Guest Speaker) Dr. Albert McCown, Director, Maternal and Child Health Division, Washington, D. C. "Educational Program for Pediatrics."

SECOND GENERAL SESSION

WEDNESDAY, MAY 6TH, 9:00 A. M.
(Ball Room Battery Park Hotel)

1. "The Non-Operative Treatment of Pelvic Infections"—Dr. Bayard Carter, Durham. From Section on Gynecology & Obstetrics.
2. "Results of Operations for Retinal Detachments." Dr. Frank Smith, Charlotte. From Section on Ophthalmology and OtoLaryngology.
3. Address (Guest Speaker) Dr. J. S. McLester, President, American Medical Association, Birmingham, Ala.
4. "Diagnosis and Treatment of Diabetes Mellitus." Dr. Verne Caviness, Raleigh. From Section on Practice of Medicine.
5. Motion Pictures—Winthrop Chemical Company—
   "Modern Methods of Anesthesia"
   "Novocain Anesthesia in Obstetrics"

12:00 m. —Conjoint Session of the Medical Society of the State of North Carolina and the State Board of Health.

Members of the North Carolina State Board of Health

S. D. Craig, M.D., President, Winston-Salem
J. N. Johnson, D.D.S., Vice-President, Goldsboro
G. G. Dixon, M.D., Ayden
H. Lee Large, M.D., Rocky Mount
H. G. Baity, Sc.D., Chapel Hill
W. T. Rainey, M.D., Fayetteville
Hubert B. Haywood, M.D., Raleigh
James P. Stowe, Ph.G., Charlotte
J. LaBruce Ward, M.D., Asheville

Executive Staff

Carl V. Reynolds, M.D., Secretary and State Health Officer.

G. M. Cooper, M.D., Assistant State Health Officer and Director Division of Preventive Medicine.

Warren H. Booker, C.E., Director Division of Sanitary Engineering.

Ernest A. Branch, D.D.S., Director Division of Oral Hygiene.

John H. Hamilton, M.D., Director Division of Laboratories.

J. C. Knox, M.D., Epidemiologist.

R. T. Stimson, M.D., Director Division of Vital Statistics.

R. E. Fox, M.D., Director Division of County Health Work.

H. F. Easom, M.D., Director Division of Industrial Hygiene.

James T. Barnes, Director Division of Crippled Children.

SECTION MEETINGS

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

TUESDAY, MAY 5, 2:00 P.M.
(Ball Room George Vanderbilt Hotel)

DR. HUGH C. WOLFE, Greensboro, *Chairman*

1. WOLFE, DR. HUGH C., Greensboro (Chairman's Address)—"Submucous Resection of the Nasal Septum."

2. HART, DR. V. K., Charlotte

   1. Lantern slides, Bronchiectasis as related to:
      a. Sinus Pathology
      b. Acute Respiratory Infections
      c. Neglected Foreign Bodies

   2. Moving pictures, "The Treatment of Bronchiectasis by the Stitt Technic of Bronchial Lavage."

3. PAGE, DR. ROBERT O., Kinston—"Measures in the Treatment of Concomitant Convergent Squint."

4. EAGLE, DR. W. W., Durham—"Irradiation of the Lymphoid Tissues of the Rhino-pharynx."

5. SMITH, DR. FRANK, Charlotte—"Results of Operations for Retinal Detachments." Before Second General Session, Wednesday, May 6th.

SECTION ON SURGERY

TUESDAY, MAY 5, 2:00 P.M.
(Ball Room Battery Park Hotel)

DR. HUNTER M. SWEANEY, Durham, *Chairman*

1. AMBLER, DR. ARTHUR, Asheville—"Cyclopropane Anesthesia."

2. GARDNER, DR. CLARENCE E., JR., Durham—"Hyperparathyroidism—Its Recognition and Treatment; With Report of Two Cases."

3. MOORE, DR. JULIAN A., Asheville—"The Surgical Treatment of Encapsulated Intrathoracic Tumors."

4. RAVDIN, DR. I. S., Philadelphia, Penna.—"Certain Aspects of Gallbladder Disease."

5. COBB, DR. DONNELL B., Goldsboro—"Surgical Significance of Meckel's Diverticulum with Particular Reference to the Occurrence of Peptic Ulcer." Read in First General Session.

6. BOICE, DR. E. S., Rocky Mount—"Indications for Operative Removal of Ureteral Stones; Review of 55 Cases."

7. MILLER, DR. O. L., Charlotte—"Apparent Indications for Lumbo-Sacral Fusion in Low Back Disorders."

SECTION ON PUBLIC HEALTH AND EDUCATION

TUESDAY, MAY 5, 2:00 P. M.
(Roof South Battery Park Hotel)

Dr. N. Thomas Ennett, Greenville, *Chairman*

1. Kutscher, Dr. G. W., Asheville—"Protecting Infants and Children by Inoculation." Discussion opened by Dr. J. W. Williams, Asheville.

2. Knight, Dr. H. W., Bostic—"A Sensible Health Program for Rural Regions." Discussion opened by Dr. T. A. Hathcock, Norwood.

3. Reynolds, Dr. Carl V., State Health Officer, Raleigh—"Poliomyelitis in North Carolina in 1935." Discussion opened: From the orthopedist's standpoint, Dr. John T. Saunders, Asheville. From the pediatrician's standpoint, Dr. John LaBruce Ward, Asheville.

4. Northington, Dr. James M., Charlotte—"Is Public Health Impinging on Private Practice?" Discussion opened by Dr. L. B. Newell, Charlotte.

5. Rosenau, Dr. Milton J., Chapel Hill—"Pneumonia." Before First General Session, Tuesday, May 5th.

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 6, 2:00 P. M.
(Ball Room Battery Park Hotel)

Dr. A. B. Holmes, Fairmont, *Chairman*

1. Nash, Dr. J. Fred, St. Pauls—"Cancer and the General Practitioner."

2. Northington, Dr. J. M., Charlotte—"A Word for the Practical in Medicine."

3. Taylor, Dr. J. T., Greensboro—"Malignant Neutropenia."

4. Miller, Dr. Lila Bonner, Raleigh—"Breasts."

5. Boseman, Dr. C. A., Pinebluff—"Common Field of Psychiatry and Internal Medicine."

6. Rainey, Dr. W. T., Fayetteville—"The Constitutional Inadequate."

7. Schaffle, Dr. Karl, Asheville—"Nervous Disorders Associated with Tuberculosis."

8. Caviness, Dr. Verne, Raleigh—"Diagnosis and Treatment of Diabetes Mellitus." Before Second General Session, Tuesday, May 4th.

SECTION ON GYNECOLOGY AND OBSTETRICS

WEDNESDAY, MAY 6, 2:00 P. M.
(Ball Room George Vanderbilt Hotel)

Dr. Thomas Leslie Lee, Kinston, *Chairman*

1. Pittman, Dr. M. A., Wilson—"A New Method of Measuring the Pelvis and Foetal Head." (Demonstration of Pelvicephalometry.) Discussion opened by Dr. Paul Neal, Raleigh.

2. Dickinson, Dr. Kenneth L., Raleigh; Proctor, Dr. Ivan, Raleigh—"A Study of Eclampsia at The Mary Elizabeth Hospital." Discussion opened by Dr. Bayard Carter, Durham.

3. Brewer, Dr. J. Street, Roseboro—"The Management of Obstetrical Hemorrhage Outside the Hospital." Discussion opened by Dr. A. B. Holmes, Fairmont.

4. Whitaker, Dr. Paul F., Kinston—"The Relation of Gynecology to General Medicine." Discussion opened by Dr. Julian Ruffin, Durham.

5. Carpenter, Dr. C. C., Wake Forest—"The Consideration of Physiology and Pathology in Gynecology."

6. Nalle, Dr. Brodie C., Charlotte—"Abortions." Discussion opened by Dr. Oren Moore, Charlotte.

7. Ferguson, Dr. Robert Thrift, Charlotte—"A Review of Five Hundred Cases of Female Sterility From a Functional-Endocrinal and Organic Viewpoint." Discussion opened by Dr. Ivan Procter, Raleigh.

8. Carter, Dr. Bayard, Durham—"The Non-Operative Treatment of Pelvic Infections." Before Second General Session, May 6th.

SECTION ON PEDIATRICS

WEDNESDAY, MAY 6, 2:00 P. M.
(Roof South Battery Park Hotel)

Dr. J. A. Shaw, Fayetteville, *Chairman*

1. Shaw, Dr. J. A., Fayetteville (Chairman's Address)—"Pertussis Vaccine."

2. Root, Dr. A. S., Raleigh—"Poliomyelitis."

3. McBryde, Dr. Angus, Durham—"Fever Therapy in Children."

4. Ashe, Dr. John R., Charlotte—"Mild Hypothyroidism in Children."

5. Roberts, Dr. B. W., Durham—"Pneumonia in Childhood."

6. Bittinger, Dr. S. M., Sanatorium—"A General Discussion of Tuberculosis in Childhood."

7. McCown, Dr. Albert, Washington, D. C., Director, Maternal and Child Health Division—"Educational Program for Pediatrics." Before First General Session Tuesday, May 5th.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

OFFICERS

President—Mrs. C. P. Eldridge.....Raleigh
President-elect—Mrs. J. R. Terry.....Lexington
Chairman Board of Past Presidents—Mrs. P. P. McCain.....Sanatorium
First Vice-President and Chairman of Organization—Mrs. J. Buren Sidbury Wilmington
Second Vice-President and Chairman of Bed—Mrs. W. T. Rainey.....Fayetteville
Third Vice-President and Chairman of Loan Fund—Mrs. R. A. Schoonover Greensboro
Corresponding Secretary—Mrs. Verne Caviness.....Raleigh
Recording Secretary—Mrs. K. B. Pace.....Greenville
Treasurer—Mrs. Fred R. Taylor.....High Point

COUNCILLORS

First District—Mrs. T. L. Carter.....Gatesville
Second District—Mrs. E. B. Beasley.....Fountain
Third District—Mrs. G. B. Barefoot.....Wilmington
Fourth District—Mrs. C. F. Strosnider.....Goldsboro
Fifth District—Mrs. R. A. Matheson.....Raeford
Sixth District—Mrs. J. S. Hooker.....Chapel Hill
Seventh District—
Eighth District—Mrs. W. P. Knight.....Greensboro
Ninth District—Mrs. J. R. Terry.....Lexington
Tenth District—Mrs. W. A. Brewton.....Enka

STANDING COMMITTEES

Public Relations—Mrs. R. D. McMillan.....Red Springs
Hygeia—Mrs. Fred Taylor.....High Point
Historian—Mrs. Julian A. Moore.....Asheville
Research—Mrs. Foy Roberson.....Durham
Memorial—Mrs. I. H. Manning.....Chapel Hill

MONDAY, MAY 4

4:00 p. m.—Guests of Biltmore Dairy. Cars leave Battery Park Hotel promptly.
7:15 p. m.—Pre-Convention Executive Board Meeting (Roof Lounge).
8:30 p. m.—Informal social evening for all convention guests (Roof Lounge).

TUESDAY, MAY 5

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. Paul H. Ringer, Asheville.
Presentation of President's Jewel by the President-elect, Dr. C. F. Strosnider, Goldsboro.
(Ball Room, Battery Park Hotel).

10:30 a. m.—Pre-Convention Executive Board Meeting (Roof Lounge).

11:00 a. m.—Annual Meeting (Roof Lounge).

2:30 p. m.—Scenic Drive. Cars leave Battery Park Hotel *promptly* at 2:30.

4:30 p. m.—Tea, Biltmore Forest Country Club.
Guests of Mrs. Paul H. Ringer and Mrs. G. Farrar Parker.

9:00 p. m.—President's Reception and Fourteenth Annual Medical Society Ball.
(Ball Room, Battery Park Hotel).

WEDNESDAY, MAY 6

10:00 a. m.—Cars will be available for trips to various points of interest.
Biltmore House—transportation furnished
Tickets $1.18—secured at registration desk

INFORMATION FOR LADIES

1. Register at Battery Park Hotel on arrival and receive badge. $1.00 registration fee for all who do not present 1935-1936 membership card.
2. Wear badge to all functions.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. L. M. Griffith, *Chairman*.....Asheville
Mrs. M. L. Stevens.....Asheville
Mrs. G. Farrar Parker.....Asheville
Mrs. W. A. Brewton.....Enka
Mrs. A. B. Craddock.....Asheville
Mrs. T. R. Huffines.....Asheville
Mrs. J. W. Huston.....Asheville

Tuesday, May 5, 11:00 a. m., Roof Lounge

PROGRAM

Mrs. C. P. Eldridge, *President*, Presiding

Call to Order.....Mrs. C. P. Eldridge, President
Prayer.....Mrs. H. H. Harrisor
Greetings.....Mrs. G. Farrar Parke:
Response—
Memorial Service—

BUSINESS SESSION:

Report of Secretary.....Mrs. K. B. Pace
Report of Treasurer.....Mrs. F. R. Taylor
Report of Chairman of Organization.....Mrs. J. Buren Sidbury
Report Chairman of McCain Bed.....Mrs. W. T. Rainey
Report Chairman of Loan Fund.....Mrs. R. A. Schoonover
Report from American Medical Association.....Mrs. A. C. Bulla
Greetings from the Medical Society.....Dr. Paul H. Ringer, President
Guest Speaker—
Report of Nominating Committee.....Mrs. C. D. Thomas, Chairman
Election of Officers
Installation of Officers
Announcements.....Mrs. J. R. Terry, Incoming President
Adjournment

TUESDAY, MAY 5, 7:30 P. M., ROOF LOUNGE

Post-Convention Executive Board Meeting.

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

Twenty-Sixth Annual Session

MONDAY, MAY 4, 1936

(Ball Room Battery Park Hotel)

President—Dr. R. S. McGeachy, Weldon
Vice-President—Dr. R. M. Buie, Greensboro
Secretary—Dr. A. H. Elliott, Wilmington

PROGRAM

9:30 a. m.—Registration.

9:45 a. m.—Invocation.

10:00 a. m.—President's Address—Dr. R. S. McGeachy, Weldon.

10:30 a. m.—"Health Education in the School Curriculum"—Mr. C. F. Carroll, Superintendent of County Schools, Bryson City.
Discussion opened by Dr. G. M. Cooper, Assistant State Health Officer, Raleigh.

11:00 a. m.—"The Relationship of Eugenics to Public Health"—Dr. William Allen, Charlotte. Discussion opened by Dr. M. T. Foster, Health Officer, Fayetteville.

11:30 a. m.—"Public Health Nursing"—Miss Josephine L. Daniels, R.N., State Board of Health, Raleigh. Discussion opened by Dr. J. Roy Hege, Health Officer, Winston-Salem.

12:00 m. Resolutions and Appointment of Committees.

Noon Recess

2:00 p. m.—"Poliomyelitis and the Public"—Dr. A. C. Bulla, Raleigh. Discussion opened by Dr. J. C. Knox, State Board of Health, Raleigh.

3:00 p. m.—"Social Security and the Development of Public Health Work in North Carolina"—Dr. R. E. Fox, State Board of Health, Raleigh. Discussion opened by Dr. John H. Hamilton, State Board of Health, Raleigh.

3:30 p. m.—"Determining Community Health Needs"—Dr. M. V. Ziegler, Surgeon, U. S. Public Health Service, Washington, D. C.

4:00 p. m.—"Sanitation in Public Health Work"—Dr. J. H. Epperson, Durham. Discussion opened by Mr. Warren H. Booker, C.E., State Board of Health, Raleigh.

4:30 p. m.—Reports of Committees.
Announcements.

Evening Session

6:00 p. m.—Dinner Meeting (Roof North Battery Park Hotel).

"Maternal and Child Health—Why Should the Maternal and Child Death Rate be so High in the South, and What Remedies Are We Going to Apply." Dr. James A. Hayne, State Health Officer, Columbia, S. C.

Old Business.

New Business.

Election of Officers.

TRANSACTIONS

OF THE

EIGHTY-THIRD ANNUAL MEETING

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

ASHEVILLE, MAY 4, 5, 6, 1936

SESSIONS OF THE HOUSE OF DELEGATES

MONDAY EVENING, MAY 4, 1936

The meeting of the House of Delegates of the Medical Society of the State of North Carolina convened at eight twenty-five o'clock in the Ball Room, Battery Park Hotel, Asheville, Dr. Paul H. Ringer, President of the Society, presiding.

President Ringer: Gentlemen, I will now call to order the House of Delegates of the Medical Society of North Carolina for the year 1936.

The first on the order of business is the Roll Call of Delegates, which will be done by the Secretary, Dr. McBrayer.

. . . Secretary McBrayer called the roll of delegates. . .

ROLL CALL

County	*Delegate*
Alamance-Caswell	George L. Carrington
Anson	
Avery	R. H. Hardin
Beaufort	D. E. Ford, DeWitt Kluttz
Bertie	
Bladen	D. D. Clark
Brunswick	
Buncombe	Robt. R. Ivey, C. C. Orr, C. A. Hensley, Robt. B. Scott
Burke	J. W. Vernon
Cabarrus	Julian Busby
Caldwell	J. D. Rudisill
Carteret	
Catawba	
Chatham	
Cherokee	Robt. Wm. Petrie
Chowan-Perquimans	
Cleveland	Ben H. Kendall
Columbus	W. A. Green
Craven	
Cumberland	J. F. Highsmith

Davidson ..... W. J. Vestal
Davie .....
Duplin ..... R. L. Carr
Durham-Orange ..... W. C. Davison, W. B. McCutcheon, R. A. Ross
Edgecombe-Nash ..... R. S. Anderson, Borden Hooks
Forsythe ..... J. B. Whittington, V. M. Long, R. A. Moore
Franklin .....
Gaston ..... McT. G. Anders
Gates ..... T. L. Carter
Granville ..... N. C. Daniel
Greene .....
Guilford ..... R. B. Davis
Halifax ..... R. S. McGeachy
Harnett ..... A. T. Wyatt
Haywood ..... J. F. Abel
Henderson ..... R. Hyatt Brown
Hertford .....
Hoke ..... S. M. Bittinger
Hyde .....
Iredell-Alexander ..... James W. Davis, Chas. B. Herman
Jackson .....
Johnston ..... J. C. Grady
Jones .....
Lee .....
Lenoir ..... Paul Whitaker
Lincoln .....
McDowell ..... D. M. McIntosh
Macon-Clay .....
Madison .....
Martin-Washington-Tyrrell ..... J. H. Saunders, Jesse Ward
Mecklenburg .... W. S. Rankin, R. B. McKnight, J. S. Gaul, J. A. Elliott, R. F. Leinbach
Mitchell ..... C. A. Peterson
Montgomery .....
Moore ..... W. E. Overcash
New Hanover ..... W. Houston Moore
Northampton .....
Onslow .....
Pamlico ..... D. A. Dees
Pasquotank-Camden-Currituck-Dare ..... W. W. Johnston
Pender .....
Person .....
Pitt ..... J. L. Winstead
Polk ..... M. C. Palmer
Randolph ..... R. P. Sykes
Richmond ..... W. D. James
Robeson ..... T. C. Johnston
Rockingham .....
Rowan ..... M. L. Monk
Rutherford ..... R. H. Crawford
Sampson ..... J. Street Brewer
Scotland .....
Stanly ..... C. M. Lentz
Stokes .....
Surry-Yadkin ..... N. W. Mackie
Swain ..... George M. Leiby

Transylvania ..... Joe E. Osborne
Union .....
Vance ..... H. A. Newell
Wake ..... I. M. Proctor, M. D. Hill, N. H. McLeod, C. C. Carpenter
Warren .....
Watauga-Ashe .....
Wayne ..... Wm. H. Smith
Wilkes-Alleghany ..... W. K. Newton
Wilson ..... George Mitchell
Yancey .....

President Ringer: The roll is called, I am advised by the Secretary.

Next on the order of business, gentlemen, is the President's Message to the House of Delegates. Before starting on this rather brief document I would like to issue to all of you a most cordial invitation to visit the Asheville Medical Library, established by the Buncombe County Medical Society, which is located in Room 288 in the Arcade Building right across the street. We will be glad to have you see it. It isn't as good as Mecklenburg's and we don't pretend it is, but Mecklenburg is an adult and we have been in existence not quite a year. We hope all of you will take the opportunity to go in there and see what we have to offer, and it may also give you an idea of what we hope to become.

. . . President Ringer then presented his prepared Message. . .

(Applause)

PRESIDENT'S ADDRESS TO THE HOUSE OF DELEGATES

Paul H. Ringer, M.D., F.A.C.P.

At the meeting of the House of Delegates each year, it is customary for the president to deliver his annual message and to give, as it were, an account of his stewardship during the year of his incumbency. I will not take up your time to more than mention the great honor that I have felt to have been accorded me in having been made your chief executive for the past year, or how grateful I have been for the uniform courtesy and friendliness with which I have been received in the various portions of the State when I have attended the various meetings. That opinions have sometimes clashed has not one whit lessened the pleasure of the association with colleagues, for it would indeed be a drab world were everyone of the same mind.

As you know, presidential years are alternately easy and hard, dependent upon whether the General Assembly is in session. The meetings of that body always make the duties of the president more onerous, and I can but be thankful that a kindly Providence delegated me to be president during an easy year. As a result, too, there is not as much to report to the House of Delegates as there was last year or, I imagine, as there will be next year. No startling developments have occurred, which, however, does not mean that the past twelve months have been devoid of interest to the profession.

As your president, I have tried to visit the various portions of the State. I have not been able to visit every district medical society, either because of lack of time or the existence of other engagements. You will all realize that it is much more difficult for an individual living in Asheville to get around throughout our commonwealth than it is for someone living more or less centrally.

I feel it my duty, and I also feel it a very special pleasure, to pay my respects at this time and in this place to Dr. L. B. McBrayer, our secretary. He has aided me enormously in each and every bit of work that I have had to do during the year. He has accompanied me on practically all my journeys or met me at the goal thereof. He has been tireless in furnishing me with any information that I desired; and I feel that whatever credit may accrue to my administration, a large portion of it is due to his enthusiasm and efforts. During the summer he and myself visited all the western counties and tried to instill into the medical personnel thereof a little more zeal for organized medicine and for the establishment of more active county societies. I chose the western part of the State for two reasons: In the first place, it was my section of the State; and in the second place, it was within relatively easy reach of Asheville. I felt from the start that I could not possibly contemplate visiting every county in the State, and therefore I naturally concentrated upon those which were nearest at hand and which, at the same time, were in need of what aid I was able to give. There is no need of detailing visits to the various district societies save to say that all were interesting and that each experience was pleasant.

The Executive Committee has met twice during the past year for the transaction of routine business, which meetings are duly and properly recorded in the minutes.

Dr. Donnell B. Cobb, of Goldsboro, and his committee, should greatly be congratulated upon the fine work that they have done in completing the new fee bill in connection with fees paid by the State Industrial Commission. The total fee in the bill has been raised 13%—some items as much as 29% and a few others as much as 45%. While the committee, according to its report, was not able to accomplish all that it wished, nevertheless it has done most commendable work and deserves our sincere and heartfelt thanks. It is pleasant to know from the chairman of the committee that its sessions with the Industrial Commission were at all times conducted in a spirit of friendship and coöperation.

Our secretary worked very hard, carried on an active correspondence, and made at least one trip to Chicago to secure the continuation of our two-year medical schools, at the University of North Carolina and at Wake Forest. In this he was successful, and for the time being at any rate these schools are going to continue.

In pursuance of the ideas expressed by my predecessor, Dr. Paul P. McCain, post-graduate assemblies were carried on. The one at Banner

Elk, under the leadership of Dr. R. H. Hardin, proved a great success; and it was a source of much regret to me that because of illness I was unable to be present. Dr. Hardin was asked to continue the good work. A post-graduate course in obstetrics, under the sponsorship of the State Board of Health and under the immediate direction of Dr. G. M. Cooper of that body, has been and is being held and has been found to be most satisfactory to those taking part.

It is very important to the medical profession of the State that it have sympathetic and adequate representation in the General Assembly. Naturally, the first solution that presents itself is the sending of more physicians to the Senate and the House. It has been estimated that their combined number should be about twenty. A very practical objection, however, is promptly encountered; namely, that in the vast majority of instances the men best qualified for this position among the members of our profession are unable to accept because it is out of the question for them to absent themselves from their practice for a period as long and as indefinite as that taken up by the meetings of the General Assembly. There are relatively few physicians who can make the inevitable sacrifice. The alternative, then, is to select as our representatives individuals whom we know to be sympathetically minded toward our profession; and it behooves us, as and when men declare their candidacy, to find out from them directly their attitude toward the medical profession.

Physicians as a whole occupy a very respected place in their several communities. No candidate for the General Assembly will willingly oppose the united front of the physicians of his town or county, for he knows that in opposing them he is opposing the better element in the community, an element whose influence is far-flung. We of the profession cannot get the type of representation we wish unless we work for it. We must make our wants and our attitude known, and we must insist that individuals who are sent to the General Assembly be those with sympathy and consideration for the guild that we represent.

I was much interested in and much surprised at the disclosure made in Dr. Northington's editorial in *Southern Medicine and Surgery* for April that members of Congress are admitted to Naval Hospital in Washington for the nominal fee of $3.75 a day. In this editorial he quotes extensively from the *Washington Herald* and I am taking the liberty of reproducing a few short paragraphs:

> "For Congressmen, high officials, and White House secretaries, Naval Hospital is wide open. For war veterans it is shut tight. * * * *
>
> The Veterans Administration pays almost $300,000 a year, according to the 1937 budget, to Naval Hospital.
>
> Every enlisted man and officer of the Navy also pays 20 cents a month toward Navy hospitals. When those outside the Navy go there, they are eating into these funds. * * *

> In the Capitol is a complete medical center, under the direction of Dr. George W. Calver, who holds the rank of captain in the Medical Corps of the Navy.
>
> Dr. Calver has three assistants. Altogether, those entrusted with the health of those who work on Capitol Hill get $20,600 a year, including expenses.
>
> But that's only the start of it. A Congressman leaves the floor and visits Dr. Calver, saying he doesn't feel well. Dr. Calver looks him over, and remarks that a few days in a hospital would help.
>
> But the Congressman isn't sent to Emergency, or Garfield, or Georgetown. At these hospitals, he would be charged full fare for a room and bath and the attention a Congressman wants. Dr. Calver gets him into Naval Hospital, where war veterans can't go. He gets them in at $3.75 a day. At most other hospitals, all you get is a bed in a ward for that figure."

This is a quotation from the *Washington Herald.* The following is Dr. Northington's personal comment on the situation:

> "Nearly two years ago, the Medical Society of the District of Columbia made dignified and energetic protest against these practices, sending copies to the President and each member of his Cabinet, to the Superintendents of the Government Hospitals in Washington and other proper officials, and to the American Medical Association. We do not know whether anything was done; evidently nothing effective. To allow these officials to sponge on Government hospitals and doctors is to acquiesce in an outrageous misappropriation of tax funds and grievous injustice to the other hospitals and private doctors in Washington."

It is impossible not to agree wholeheartedly with Dr. Northington's conclusion. He states that he would like to see the Medical Society of the State of North Carolina take action on this matter at this meeting. In this I heartily concur and make it as one of my recommendations in this address to the House of Delegates that a firm and dignified protest be made to the proper authorities against the discrimination and gross injustice that appears to be perpetrated.

It is strange that the two projects coming into existence during my administration against which the most protest has been heard, have been the two which those favoring them believed would prove to be of the greatest benefit to the physicians of the State. I refer to the raising of the dues to the State Society from $5 to $10 a year, and to the activities of the Hospital Savings Association. I have heard it rumored that at this very meeting tonight a protest is going to be made against the increase of dues. Dues to medical societies throughout the Union range from a low of $3 a year in Alabama to a high of $25 a year in Texas. The majority of the states have $10 to $15 a year dues. It was not felt by this very body which

voted to raise the dues, by the Executive Committee which voted unanimously for two years to raise the dues, or by the Finance Committee which had to take the initial step in the matter, that it was asking too much of the physicians of North Carolina to pay $10 a year for the privilege of belonging to their State Society. If the Medical Society of this State is to be simply a scientific body meeting once a year for the hearing of scientific papers and then disbanding with no thought of having any activities for another twelve months, then there is no need for annual dues of $10; but if this Medical Society is to be a living force in the State of North Carolina, if it is to look after the welfare of organized medicine, and if it is to be alive to matters favorable to, or prejudicial to, the medical profession as and when they arise, and if it is to take steps to inhibit or to further such measures, then money is necessary and money can only be had through dues.

You all remember the fine response to the appeal for voluntary contributions to the Medical Society some sixteen months ago when over $2,000 were donated by a profession that was eager and enthusiastic to help an organization for which they had pride and affection; but this inspiring response could not and should not be duplicated; and while, as a result of the generosity of her members, the Society escaped bankruptcy, the same condition of insolvency would again obtain if the activities of the Society were carried on unless more funds were available.

Legislation is an expensive matter; it also is very necessary. It is not right to expect members of committees to pay their way to and from the place of meeting with no knowledge as to whether or not they will be reimbursed for the actual cash expended. For the time expended and work lost while serving the Medical Society they can not, of course, be reimbursed. My two immediate predecessors paid all their own traveling expenses. The secretary spends far more for the State Society than he receives in his annual honorarium. These things should not be. In my opinion, opposition to raising the dues is a state of mind rather than a state of pocketbook. Actually, the increase represents an expenditure of less than a cent and a half a day. I do not see how the Society can function adequately on dues of $5 a year, and I do not see a valid objection to increasing these dues by less than a cent and a half a day in order to increase the scope and the needs of medicine throughout the State.

The Hospital Savings Association, child of our much respected and beloved Dr. Manning, has also been the target for some carping criticism. It has been felt that there was a small hierarchy within the Medical Society that was trying to force something down the throats of the doctors of the State. Where or how this idea originated I do not know. In view of my position as president, I have been one of the trustees of the Hospital Savings Association during the past year and I have attended many meetings in connection with this organization. At no time have I read, heard or seen anything that would lead me to think that an inner circle was trying to force something upon the profession. This plan was approved by

this very body which is now in session and was approved by the Executive Committee. It has been said that the Hospital Savings Association was going to prove to be a child of the Duke Endowment, and was simply another attempt on the part of that powerful organization to gain control of and regiment the medical profession of the State. While the Duke Endowment did give $25,000 to the Hospital Savings Association in order to enable it to begin operations, I have seen no evidence whatsoever of any attempt to secure control.

It has been said that hospitals will be made into boarding houses, to which patients will be sent simply because they ask to go. That is absolutely in the hands of the medical profession; and it must be remembered that it is expressly stipulated in the contract offered by the Hospital Savings Association that no member can enter a hospital for diagnostic survey; that he must be actually sick, and that the patient must be sent in by his family physician, save of course in cases of emergency when he may not be available.

The most insistent criticism has been against including professional fees, and we are all in accord that such should not be the case, nor is such the case. At first it was contemplated including x-ray as a technical service, but the radiologists of the State protested very earnestly, and it was seen that their contention was absolutely correct, for they certainly should be looked upon as physicians and not as photographers. The inclusion of x-ray was, therefore, omitted. Anesthesia is not included unless the anesthetic is given by a salaried employee of the hospital, which seems eminently fair. Clinical laboratory examinations *are included* as technical service, because these are practically invariably done by paid technicians, the physician simply interpreting the result. At no time has it ever been contemplated to include medical or surgical fees, which is not the case in many other commercial companies which are operating within the boundaries of North Carolina.

It has been a source of surprise and of pain to the officers and trustees of the Hospital Savings Association to see what opposition there has been to the plan. It is not pretended that the plan is perfect, but it is earnestly believed that the plan is workable and that as time goes on flaws therein will be eliminated and a practical working out of the organization's aims will result. It seems unfair to strangle this infant, which is still in its swaddling clothes. Give it a chance to grow and to become lusty, and then correct the bad habits that it may develop. We physicians are not going to further our best interests if we constantly take exception to new things that are being fostered with the idea of aiding the profession as a whole, and in this I include the hospitals of the State. We must pull together! The Hospital Savings Association plan is not one that is going to prove successful as the result of a fight being won by a slender majority. It is only going to prove a success if all are willing to subordinate for the time being their own personal preferences and give it a chance to prove whether or not it contains the good which its founders who have studied the matter

long and intently believe it to possess. It must be further realized that those interested in this plan are interested solely from an altruistic standpoint, for it is not a money-making scheme and no individual or group of individuals will get a penny from it. It is a plan which has been devised to help the man of low income in the presence of a sudden medical or surgical emergency, to help the hospitals which would have to take these patients whether or not they received any remuneration for so doing, and to help the individual physician or surgeon in the care of these people who, if their hospital bills are paid for a period of twenty-one days, will certainly be in a better position to pay the physician who attends them *something,* rather than, as is usually the case at present, being wholly gratuitous cases. So it is a mutual humanitarian helping plan and should not be discarded without a trial.

I recommend most heartily to the House of Delegates and to my successor for the coming year:

1. Continuance of post-graduate assemblies.
2. Continuance of post-graduate obstetrical courses.
3. Careful selection of candidates for the General Assembly.
4. Adequate protest against injustice being practiced in Washington.
5. Continuance of annual dues at $10.
6. Continuance of Hospital Savings Association plan.

In conclusion, I thank you for your courtesy, I appreciate your coöperation, I rejoice in those differences of opinion which have enlivened several meetings which I have attended and which are the breath of life to any progress; and to this House of Delegates, as its presiding officer, I will, at the close of the session in Asheville, bid an affectionate farewell.

President Ringer: Gentlemen, next on the order of business is the reading of the minutes of the last meeting of the House of Delegates which will be done by the Secretary.

Secretary McBrayer: Mr. President, there are sixty pages in this book. The members have already received copies of this. Shall I proceed, Mr. President?

President Ringer: The Secretary has stated that if he is to proceed he will have to read some sixty pages which are in the Transactions. At other meetings it has been customary for someone to move the omission of the reading of these minutes.

What is your pleasure, gentlemen?

Dr. R. H. Crawford (Rutherford County): I move that the minutes as they appear in the Transactions be sufficient for the meeting.

. . . The motion was duly seconded. . .

President Ringer: Is there any discussion? If not, all those in favor of letting the minutes as they appear in the Transactions stand sufficient,

and not requiring their reading at this time signify by saying, "Aye," contrary-minded, "No." The motion is carried and sixty pages of reading matter will be omitted.

Next is the reading of the minutes of the Executive Committee meetings. These also occupy a great many pages and appear in the TRANSACTIONS, and it seems to me it would expedite matters if a similar motion should be made with regard to the minutes of the Executive Committee meetings.

DR. KLUTZ: I make a motion that the reading of those minutes be dispensed with, with the addition that anything that Dr. McBrayer thinks is important, he will tell us about. Otherwise, let the minutes be accepted as they stand.

. . . The motion was duly seconded. . .

PRESIDENT RINGER: A motion has been made and seconded that the minutes of the Executive Committee meetings be accepted, with the addition that if there is anything in them that Dr. McBrayer thinks of paramount importance he will report that to this body. Is there discussion of the motion?

. . . The motion was put to a vote and carried. . .

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

SIR WALTER HOTEL, Raleigh

SEPTEMBER 18, 1935

The meeting of the Executive Committee was called to order by the President, Dr. Paul H. Ringer, at 11:00 a.m., Wednesday, September 18, 1935, Sir Walter Hotel, Raleigh.

The following were present:

Dr. Paul H. Ringer, President ..... Asheville
Dr. J. K. Pepper, First Vice-President ..... Winston-Salem
Dr. E. S. Bulluck, Second Vice-President ..... Wilmington
Dr. L. B. McBrayer, Secretary-Treasurer ..... Southern Pines

COUNCILLORS

Dr. C. B. Williams ..... Elizabeth City
Dr. K. B. Pace ..... Greenville
Dr. E. S. Boice ..... Rocky Mount
Dr. Forrest M. Houser ..... Cherryville
Dr. R. C. Mitchell ..... Mount Airy
Dr. J. R. Terry ..... Lexington
Dr. Benj. J. Lawrence, Chairman Committee on Legislation ..... Raleigh
Dr. C. V. Reynolds, State Health Officer ..... Raleigh
Dr. Geo. M. Cooper, Ass't State Health Officer ..... Raleigh

Dr. Ringer stated he wished to come to the matter of the transaction of the business before the Executive Committee and therefore would make no lengthy remarks.

The report of the Finance Committee was read by Dr. Ringer, as follows:

As Chairman of the Finance Committee, I submit the following budget for the year of 1935.

The income received this year will permit paying the travel expenses of the Executive Committee but will not permit payment of travel expenses of the councillors within their respective districts.

The Finance Committee has allotted three hundred dollars for the travel expenses of other committees. We have also allotted five hundred dollars for the use of the Legislatlive Committee. While the legislature does not meet this year, it is felt that money should be available for any contingency with which they might be faced. In all probability the Legislative Committee will not use that fund and the expected deficit will not materialize.

In view of the coming increase of dues the Finance Committee feels that the State Society should continue to publish the transactions of the Public Health Association.

The Finance Committee further suggests that each officer keep an accurate record of all moneys spent while on business for the Society. We have no means of determining the actual expenses incurred in transacting the Society's business because heretofore the expenses have been paid by various men themselves, either wholly or in part and no record has been kept. If each officer would turn in an accurate expense account the Finance Committee would have some data upon which they could formulate a budget to meet the expenses of the Society.

Trusting that this budget will meet the approval of the Executive Committee, I remain,

Cordially yours,

(Signed) Julian A. Moore, *Chairman.*

PROPOSED BUDGET

Medical Society of the State of North Carolina

January 1, 1935, to December 31, 1935

Stationery for all officers except Secretary	$ 100.00
Executive Committee—Travel expenses	600.00
Other Committees—Travel expenses	300.00
Legislative Committee	500.00
President's Office—Travel and miscellaneous expense	325.00
Secretary's Office—	
Salary	1,000.00
Clerical assistance	1,000.00
Stationery	100.00

Rent, lights and water	300.00
Travel expense	500.00
Miscellaneous	400.00
Emergency fund	300.00
Transactions—	
Reporting	58.16
Preparation of copy	55.50
Printing, binding and mailing	2,300.00
Expenses of State Meeting	185.35
Total	$8,024.01
Expected Income	7,755.67
Expected Deficit	268.34

Julian A. Moore, Chairman
Wm. M. Coppridge
Vance P. Peery

Dr. Houser made a motion that the report be accepted as read which was seconded and unanimously carried. Dr. Pace made a suggestion that if the Legislative Committee did not use their appropriation the years that the legislature is not in session that it be set aside each year to accumulate as a distinct legislative fund. Motion was seconded and passed unanimously.

Dr. Geo. M. Cooper, Assistant State Health Officer, was asked by President Ringer to present the subject of post-graduate work in obstetrics for physicians, a course to be conducted by the State Board of Health in coöperation with the Children's Bureau.

Dr. Cooper stated that Prof. James R. McCord of Atlanta, Ga., was assigned this state but that he could only be available for three weeks, but that Dr. McCord had approved the sending of Dr. Hanna or Dr. Williams for the remaining seven weeks provided a ten-weeks course was desired. The original plan was for a ten weeks course, to go through the state holding these meetings a week in each place, to bring to the physicians a post graduate course in obstetrics or the equal of what he would get by taking a post graduate course in New York, this to be put on by a man of experience in teaching this course to students, in other words, a genuine post-graduate course. Dr. McCord, however, can only come for three weeks and will teach from two to five each afternoon, lectures to be illustrated and a round table discussion to follow. Dr. Cooper further stated that they wished the members of the Executive Committee to express themselves fully on this matter, whether they only desired a three weeks course or should they go on and have the other seven weeks and also decide definitely in which localities they should be held, that Wake County Society had asked for one week and Pitt County had asked for one week of the series. If the plan is accepted every practicing physician within fifty miles of the place where the lectures are held will be extended an invitation to attend. Dr. Cooper emphasized the fact that they wanted the State Medical Society to assume sponsorship for the program and the State

Board of Health will do the detail work, the State Board of Health to be in the background. The Children's Bureau pays for the work of sending out letters to every doctor, and all other expenses.

Dr. Ringer asked for expressions of opinion.

Dr. Bulluck stated that it could not be anything but good and he would like to make a motion that Dr. Cooper be asked to apply for the ten-weeks course, the distribution rather than being by contest or application to be left with him to be placed where he thinks they would be best attended, which was seconded by Dr. Houser and unanimously carried.

Dr. McBrayer stated he didn't know Dr. Cooper had these plans in the making, that Dr. McCain in his President's Address last year recommended that the Medical Society of the State of North Carolina put on a post-graduate course or courses in the state and the committee on President's Address recommended that a committee be appointed to study the matter, etc. President Ringer appointed a committee and they took it they were not only to study but to act and therefore they held a post-graduate assembly on the subject of Obstetrics and Gynecology at Banner Elk which was quite largely attended, but they decided to hold off until Dr. Cooper had completed his plans.

Dr. McBrayer stated further that he felt the lectures should be given by state men, however, Dr. Cooper's arrangements had gone so far there was no possibility of making a change and for that reason it was generally agreed that the post-graduate assembly would hold off until Dr. Cooper got through with his post-graduate work. Dr. McBrayer stated by reputation these men are particularly good, Dr. McCord especially, and the others too, but that he felt like he wanted to say these few words so everybody would understand that there was no opposition on his part to the work Dr. Cooper was doing.

On motion duly seconded it was unanimously voted to place the whole matter in Dr. Cooper's hands.

Dr. Houser suggested that it had occurred to him since Dr. Cooper had made arrangements for us to get some post-graduate work in Obstetrics and Gynecology, why couldn't the post-graduate assembly give the physicians some work in some other line of medicine, therapeutics, etc., which was unanimously agreed to.

Dr. Cooper asked Dr. Reynolds if the Executive Committee would decide where these meetings were to be held and asked that Pitt County be the first place to start and unless there was some objection on the part of the Executive Committee that we rule to start at Greenville. On this suggestion the various councillors suggested the following places:

Dr. Williams, First District, Elizabeth City.

Dr. Pace, Second District, Greenville.

Dr. Boice, Third District, didn't know whether Rocky Mount or Wilson would be more desirable but would notify Dr. McBrayer later.

Dr. McMillan of the Fifth District was not present but Dr. McBrayer said he would get in touch with him and advise Dr. Cooper later.

Sixth District, Raleigh.

Dr. Houser, Seventh District, suggested either Charlotte or Gastonia but would advise later.

Dr. Mitchell, Eighth District, Winston-Salem.

Dr. Terry, Ninth District, suggested either Salisbury or Statesville but would advise later.

Tenth District, Asheville.

Dr. Ringer called on Dr. C. V. Reynolds, State Health Officer, for a few remarks.

Dr. Reynolds stated that the last legislature appropriated to the Industrial Commission ten thousand dollars for a study of industrial diseases to be administered by the three industrial commissioners. Since this bill was made a law the Industrial Commission approached the State Board of Health requesting that this be turned over directly to the State Board of Health as a separate division to be managed and controlled by the State Health Officer in coöperation with the Industrial Commission, the idea being to see if they couldn't get some supplementary funds from the U. S. Public Health Service as a special grant for this purpose. Dr. Reynolds said it struck him forcibly with the idea that there was a chance that we could control this venture, that the State Board of Health is a child of the Medical Society and they desire always to do as the Medical Society requests them to do, but he thought it was well to consider it seriously and had taken it up with his Board and they have agreed, but he desired to know if it met with the approval of this body. Dr. Reynolds stated he had selected as the engineer for this purpose one of their best engineers and he had in mind a physician who has been recommended to him by Dr. McCain to sit in as chairman.

Dr. Houser stated if we could get this study into our hands it would no doubt mean more unity with the Industrial Commission and the Medical Society and if they agree to leave it entirely in our hands he would suggest that we endorse Dr. Reynolds' plan and congratulate him. This was seconded by Dr. Mitchell and unanimously carried.

Dr. Reynolds thanked the Executive Committee for their kind consideration of this plan.

Dr. Ringer asked for report of the Committee on Revision of Fee Bill for medical services to patients for industrial commission. In the absence of Dr. Cobb, Chairman of this committee, the following report was read by Dr. McBrayer:

Dr. L. B. McBrayer,
Southern Pines, N. C.
Dear Doctor McBrayer:

Thank you for your letter.

I would appreciate it if you would let the Executive Committee know that we are progressing. Things are not far enough advanced to make any definite report yet.

With kindest regards,

Sincerely yours,
Donnell B. Cobb,
Chairman Committee to Confer with Industrial Commission.

September 9, 1935.

Dr. Ringer called for report of Committee on Post-graduate Study for Physicians. Dr. McBrayer read the following:

I beg to hand you a report of the Post-graduate Assembly held at Banner Elk and arranged by the Committee on post-graduate work consisting of Dr. Jas. W. Vernon of Morganton, Dr. C. L. Sherrill of Statesville and myself.

The meeting began August 22 at 2:00 p. m. and was presided over by myself. The papers were presented throughout the meeting in a magnificent style. That evening at 7:00 p. m. a dinner was served in the dining room of Pinnacle Inn for the doctors, the nurses and the doctors' wives. Dr. Ringer was supposed to be present to make an address but due to illness was unable to attend. Mr. Davis of The Duke Endowment read a very fine paper on British Hospitals' Contributory Funds. Dr. Oren Moore of Charlotte acted as toast-master in his usual magnificent way. The third session was held Friday morning and was presided over by Dr. C. L. Sherrill, Dr. Vernon being unavoidably detained at home. The doctors present seemed to consider the Clinic a success or at least a step in the right direction.

Will say that the committee has had three meetings; one at Banner Elk, one at Morganton and one at Statesville. I will say that the committee is not planning any more post-graduate assemblies until Dr. Cooper has finished working out his plans for post-graduate work in obstetrics. After this, if the Executive Committee of the Medical Society thinks it necessary, we will begin again to carry on.

There were 62 doctors present from a rather wide area. I think it only fair to say that there were few general practitioners present. These of course being the chief persons the meeting was held for.

I am attaching a program of the meeting. At any future date that we can render any service along this line, kindly let me know.

With kindest regards, I am,

Cordially yours,
(Signed) R. H. Hardin, *Chairman.*

President Ringer suggested that this committee be advised to the effect that we did not want them to stop their work but wanted them to take up a state-wide program of medical work in various branches.

Dr. Lawrence moved that the report be received and that they continue with such recommendations as the President had suggested, which motion was seconded and unanimously carried.

Dr. McBrayer read the report of the Advisory Committee to ERA as follows:

Your Committee on ERA beg to report that the committee has had nothing to claim its attention since our last report and it is our understanding that the ERA is supposed to be no more by November 1st.

It might be well to continue the committee so if anything happened to come up we could take care of it.

P. P. McCain, M.D., Chairman,
Paul H. Ringer, M.D.,
C. F. Strosnider, M.D.,
Hubert Haywood, M.D.,
L. B. McBrayer, M.D.,
Jno. B. Wright, M.D.

Report approved.

Dr. McBrayer read the report of the Committee to Confer with Rural Projects Resettlement Administration, as follows:

Your Advisory Committee to the Resettlement Administration is pleased to report: We had a conference of your Committee with the representatives of the Resettlement Administration, Mr..... and Mr. H. P. Edwards. Members of your Committee present, Drs. Strosnider, McCain and McBrayer.

(1) The Resettlement Administration for North Carolina proposes to settle 10,000 families averaging 6.8 per family or a total of 68,000 people, most of whom have heretofore been on relief rolls in our state, on farms and in colonies in an endeavor to make them self-supporting citizens. They contemplate establishing two colonies with 1,000 families in each which will equal 6800 people in each colony. The remainder of the families will be scattered over the state in single families or perhaps in some instances in small groups of families.

The Resettlement Administration will make loans to these families to carry them through the year. The Resettlement Administration recognizes that in order for this experiment to be a success and in order for these people to repay their loan, they must keep well, therefore,

(2) They desire that each one of the 68,000 persons have a physical examination, the equal or better than a life insurance examination for an old line life insurance company, and no one who is likely to become chronically incapacitated will be accepted.

(3) They recognize their absolute dependence upon the medical profession for medical work.

(4) They desire to procure hospitalization for the entire group as needed. It is probable that the Hospital Savings Association of North Carolina, Inc., will handle this. A price of $1.00 per family per month will probably be offered by the Resettlement Administration which would be $12.00 per family per year or an annual total of $12,000.00.

(5) a. The North Carolina Resettlement Administration desires that the Medical Society of the State of North Carolina furnish medical service to all this group on some such plan as mentioned in paragraph (4).

b. When your committee expressed the thought that this would be wholly impossible and suggested the payment of fees and used the ERA fee bill as an example, subject to some changes, the reply was that they could not do that at all and if they were willing they had no appropriation that could be used in that way.

c. They suggested then that the Medical Society of the State of North Carolina could form a subsidiary corporation, composed wholly of medical men if we wished, who would have authority to receive this lump sum, make agreements, etc., and if the Society so desired, could pay the money out to the doctors who did the work on basis of whatever fee bill we might establish, taking into consideration the fact that this lump sum, whatever it is, should be considered full payment for the medical care of these patients for one year.

d. They further desire that the cost of the original physical examination be absorbed in this lump sum.

(6) Your committee would like to have instructions in regard to the matters mentioned herein.

Respectfully submitted,

C. F. Strosnider, M.D.,
P. P. McCain, M.D.,
L. B. McBrayer, M.D.

Dr. Bulluck moved that the Committee be requested to move with caution and report back to the Executive Committee before taking any action, which was seconded by Dr. Mitchell and unanimously carried.

Dr. Ringer read a message from the District of Columbia Medical Society, copy of which had previously been sent to each Councillor.

Dr. McBrayer made a motion that the Executive Committee of the Medical Society of the State of North Carolina approve in principle the document sent out by the Medical Society of the District of Columbia to the Board of Trustees of the American Medical Association and the State Medical Societies and strongly request the American Medical Association to proceed along these lines unless they had better plans which was seconded by Dr. Mitchell, and unanimously carried.

As a matter of information Dr. McBrayer presented a report of the plan of work of the Radiologists with the Hospital Savings Association, Inc., as agreed to by a committee from the Radiological Society and a committee from the Directors of the Hospital Savings Association, Inc., as follows:

To the Directors of the Hospital Savings Association, Inc., of North Carolina

Dr. I. H. Manning, President, Chapel Hill, N. C.
Mr. Grisselle, Executive Secretary, Chapel Hill, N. C.

Your Committee to Confer with Committee from Radiological Society met in the offices of Drs. Lafferty and Phillips, Charlotte Sanatorium, Charlotte, at noon, Sunday, September 15, 1935.

Present from your Committee, Brownsberger, Ringer, Willis, McBrayer. From the Radiological Society, Kluttz, Phillips, Lafferty, Mr. Grisselle was also present.

A general discussion of all different phases of the subject was had and every one present was given an opportunity to express himself.

Those present were guests of Drs. Lafferty and Phillips to lunch at the Mayfair Hotel. At the close of the lunch the following was unanimously adopted, your Committee and Committee from Radiological Society voting unanimously.

FUNDAMENTALS:

We recognize that Roentgenology has an important part in the diagnosis and treatment of diseases and that it is peculiarly and wholly the function of the physician who is also a roentgenologist to use and apply the same.

We further recognize that when a physician has made himself capable, by study and experience, of doing radiology and properly interpreting his work, he is and should be considered a specialist in this branch of medicine, and should be and is entitled to all the rights, privileges and emoluments appertaining and belonging thereto.

Making application of the foregoing fundamentals to the Hospital Savings Association of North Carolina, Inc., the individual hospitals, and the Radiologists, and the relation of each to the other, we beg to submit the following:

Resolved, (1) that this Committee recommends to the Hospital Savings Association of North Carolina, Inc., that in its contacts with the public and particularly with potential members, by printed literature or otherwise, and in its contacts and contracts with members, no mention be made of Radiological service.

(2) That any arrangement pertaining to Radiological work be consumated by and between the Hospital Savings Association of North Caro-

lina, Inc., and the individual Hospital, thereafter the Hospital will make such arrangements with the Radiologist as may be mutually satisfactory.

Respectfully submitted,
JOHN F. BROWNSBERGER, M.D., *Chairman,*
PAUL H. RINGER, M.D.,
B. C. WILLIS, M.D.,
L. B. MCBRAYER, M.D.

September 16, 1935.

Dr. Lawrence asked for the attitude of the Executive Committee in regard to the matter of insurance of doctors' fees. President Ringer suggested that we wait for the further consideration of this matter until the members of the Executive Committee were better informed on this subject. No action taken.

On motion of Dr. Terry the Executive Committee recessed for lunch.

At the request of the President, Dr. Lawrence gave a very interesting resume of a conference he and the Secretary had with Dr. Olin West, Secretary-Manager of the American Medical Association.

Dr. C. B. Williams, Councillor of the First District, brought up the matter of changing the meeting from Pinehurst to some other place and stated that there was a great deal of dissatisfaction because of the frequent meeting of the Society in Pinehurst, which was agreed to by some of the members of the Executive Committee present, while others did not agree.

On motion of Dr. Mitchell it was decided that we do not meet in Pinehurst in 1936. The name of Asheville was presented for the meeting place for 1936 and after assurance of President Ringer that the Buncombe County Medical Society would be glad to have us it was voted that the next meeting be held in Asheville. In accordance with the By-Laws the date of meeting will be April 19, 20, 21, 1936, in Asheville. Later, on suggestion of the President, the date was changed to May 4, 5, 6.

No further business appearing the meeting was declared adjourned.

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

SIR WALTER HOTEL, RALEIGH

APRIL 6, 1936

The meeting of the Executive Committee of the Medical Society of the State of North Carolina was called to order by the President, Dr. Paul H. Ringer, at 10:30 a.m., Monday, April 6, Sir Walter Hotel, Raleigh.

The following were present:

President.....Dr. Paul H. Ringer
President-elect.....Dr. C. F. Strosnider
First Vice-President.....Dr. J. K. Pepper
Second Vice-President.....Dr. E. S. Bulluck
Secretary-Treasurer.....Dr. L. B. McBrayer

COUNCILLORS

First District.....Dr. C. B. Williams
Fourth District.....Dr. E. S. Boice
Fifth District.....Dr. Roscoe McMillan
Sixth District.....Dr. W. M. Coppridge
Seventh District.....Dr. Forrest M. Houser
Ninth District.....Dr. J. R. Terry
Tenth District.....Dr. G. W. Murphy
Dr. I. H. Manning.....President Hospital Savings Association
Dr. Carl V. Reynolds.....State Health Officer

The first item of business was the presentation of the Budget for 1936. Dr. Ringer called on Dr. McBrayer to read the proposed Budget as Dr. Moore, Chairman of the Finance Committee, was not present. Dr. Coppridge, a member of the Finance Committe, being present, Dr. McBrayer asked him to present the report which is as follows:

PROPOSED BUDGET

Medical Society of the State of North Carolina

January 1, 1936, to December 31, 1936

Deficit	$ 268.34
Stationery of all Officers except Secretary	100.00
Councillors—Travel expense in district	250.00
Other Committees	1,000.00
Legislative Committee	2,500.00
President's Office—Travel and Miscellaneous expense	400.00
Secretary's Office—	
Salary	1,200.00
Clerical assistance	1,000.00
Stationery	100.00
Rent	300.00
Travel Expense	600.00
Miscellaneous	500.00
Emergency Fund	500.00
Transactions—	
Reporting and preparation of copy	150.00
Printing and binding	2,500.00
Expenses of State Meeting	500.00
Added by Executive Committee:	
Travel expenses of delegates to A.M.A	200.00
Travel expenses invited guest State Meeting	50.00
Total	12,118.34
Expected Income	12,000.00
Deficit	118.34

Dr. Strosnider made suggestion that we should present a balanced budget to which President Ringer agreed.

On motion of Dr. Houser seconded by Dr. Coppridge the Secretary was authorized to use the $150 appropriated by the budget and such additional funds as would probably come into his hands from other sources to pay for a full quota of reporters. Motion unanimously carried.

Dr. Strosnider moved that we furnish the usual courtesies to the North Carolina Public Health Association which would include a reporter. Unanimously carried.

Dr. Terry made a motion that we have the last meeting of the House of Delegates at 2:00 p. m. Seconded by Dr. Houser and unanimously carried.

President Ringer extended an invitation to the members of the Executive Committee to his home on Tuesday afternoon, May 5th.

The matter of having one of the fraternal delegates from the Medical Society of Georgia appear on our program was considered. At the request of President Ringer Dr. McBrayer stated he had repied to the Secretary of the Medical Society of Georgia saying our program was already crowded for this year and it was impossible to add anything further, that he had some doubt about the propriety of it and that we would feel a hesitancy in asking for a place for one of our fraternal delegates on their program. On motion of Dr. Pepper the secretary's action was approved.

Dr. McBrayer reported for the Committee on furnishing medical service to Resettlement Projects and stated he didn't feel there was much likelihood of accomplishing anything. That the Resettlement Projects had apparently been very difficult to handle and it had been impossible to secure enough families to carry out the projects as first intended. He then read the following letter from Mr. Edwards:

RESETTLEMENT ADMINISTRATION
Raleigh, N. C.

April 3, 1936.

DR. L. B. MCBRAYER,
Secretary-Treasurer,
Medical Society of the State of North Carolina,
Southern Pines, N. C.

DEAR DR. MCBRAYER:

I wish to acknowledge receipt of your letter of April 1st in regard to our several conferences relative to the formation for a coöperative organization for supplying medical services to our clients. Since our last conference the Resettlement Administration has changed its policy towards coöperatives of this kind and are not, at this time, disposed to finance a project as large as we contemplated. I believe that one or more on a county basis would be about as large as they would attempt to finance.

We have given some thought to organization of a medical coöperative for a single county operation and when we get this worked out to our

satisfaction we will be glad to handle the matter with you further. If we can get one set up on a county basis and find that it works satisfactorily we can probably set up others in a number of other counties.

With kind regards and best wishes, I am

Yours very truly,

(Signed) H. P. Edwards,

HPE:A *State Supervisor Community and Coöperative Services.*

Dr. Ringer stated the report of Dr. Manning in regard to Hospital Savings Association was a most fair and unbiased presentation of the proposition and he would like the Executive Committee to get all the information possible because this committee is one of the important projects of the Medical Society and represents all the different sections of the state and the men composing this committee have access to all parts of the state.

Dr. Ringer presented Mr. Jones to speak on the question of various types of insurance as represented by the Hardware Mutual Fire Insurance Company.

Dr. Houser made a motion that at some future time when the Secretary is corresponding with the members of the Medical Society, he might notify them that this insurance is available at a saving of 40%, which motion was seconded and passed unanimously.

Dr. Ringer called on Dr. C. V. Reynolds, State Health Officer, for any remarks he cared to make. Dr. Reynolds stated he only wanted to say a few words in regard to hospital insurance, that he felt this plan would work out to the best interest of all concerned.

The President asked the assembled group to adjourn temporarily to the room across the hall where lunch would be served.

Dr. Donnell Cobb, Chairman of the Committee to Confer with the Industrial Commission in regard to fee schedule reported on the new fee bill. He paid a high compliment to the workings of this Commission while Mr. Harry McMullan was Chairman and stated in his resignation the medical profession had lost a real friend, although he felt Mr. Dewey Dorsett will work with the same friendly spirit. He further stated they had not accomplished all they hoped to accomplish but they had increased the fees 45% in some instances and he hoped another committee might perhaps make further gains.

FOREWORD AND APPRECIATION

The following Fee Schedule revises and supplements the Schedule adopted in September, 1931.

The Schedule hereby promulgated is to be effective from and after March 1, 1936, and will apply to claims for medical, surgical and hospital services performed and furnished after March 1, 1936. The former schedule will apply until that date.

The schedule now promulgated was adopted by the Commission after conferences with the committee appointed by the North Carolina Medical Society composed of Dr. Donnell B. Cobb, Chairman; Dr. B. A. Hocutt, Dr. J. B. Greene, Dr. J. S. Gaul, Dr. Hubert Haywood, Dr. C. I. Allen and Dr. F. C. Smith. The work of this committee was done with a fine appreciation of the problems involved from the standpoint of the doctors of this State as well as those of the Industrial Commission necessarily incident to the administration of the compensation law.

One problem which is very difficult to solve is treatment frequency. In our opinion this can be met only by a fair and friendly attitude both by the Commission and the doctors submitting bills for approval. We confidently anticipate that these conditions will obtain and fair results may be expected therefrom.

The approval of all medical and hospital bills submitted involves a great deal of detail work upon the part of the Commission. We sincerely desire in all cases to be fair to all concerned. With the sympathetic understanding and coöperation of doctors and hospital officials we believe this can be accomplished.

North Carolina Industrial Commission,
J. Dewey Dorsett, *Chairman,*
T. A. Wilson,
Buren Jurney,
Commissioners.

Rule 8 (Amended) Effective January, 1936. The Commission has adopted the following in lieu of Rule 28, published in Vol. I, No. 3:

The provisions in the Workmen's Compensation Act relative to medical, surgical and hospital treatment are set out in the following sections:

EMPLOYER MUST FURNISH TREATMENT

Section 25. Medical, surgical, hospital, and other treatment, including medical and surgical supplies as may reasonably be required, for a period not exceeding ten weeks from date of injury to effect a cure or give relief and for such additional time as in the judgment of the Commission will tend to lessen the period of disability, and in addition thereto such original artificial members as may be reasonably necessary at the end of the healing period shall be provided by the employer. In case of a controversy arising between the employer and the employee relative to the continuance of medical, surgical, hospital, or other treatment, the Industrial Commission may order such further treatments as may in the discretion of the Commission be necessary.

The Commission may at any time upon request of an employee order a change of treatment and designate other treatment suggested by the injured employee subject to the approval of the Commission, and in such a case the expense thereof shall be borne by the employer upon the same

terms and conditions as hereinbefore provided in this section for medical and surgical treatment and attendance.

The refusal of the employee to accept any medical, hospital, surgical, or other treatment when ordered by the Industrial Commission shall bar said employee from further compensation until such refusal ceases, and no compensation shall at any time be paid for the period of suspension unless in the opinion of the Industrial Commission the circumstances justify the refusal, in which case, the Industrial Commission may order a change in the medical or hospital service.

If in an emergency on account of the employer's failure to provide the medical or other care as herein specified a physician other than provided by the employer is called to treat the injured employee, the reasonable cost of such service shall be paid by the employer if so ordered by the Industrial Commission.

Provided, however, if so desired, an injured employee may select a physician of his own choosing to attend, prescribe and assume the care and charge of his case, subject to the approval of the Industrial Commission.

MEASURE OF EMPLOYER'S LIABILITY FOR TREATMENT

SECTION 26. The pecuniary liability of the employer for medical, surgical, hospital service, or other treatment required, when ordered by the Commission, shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living when such treatment is paid for by the injured persons, and the employer shall not be liable in damages for mal-practice by a physician or surgeon furnished by him pursuant to the provisions of this section, but the consequences of any such mal-practice shall be deemed part of the injury resulting from the accident, and shall be compensated for as such.

SPECIAL EXAMINATIONS

SECTION 63. The Commission or any member thereof may, upon the application of either party, or upon its own motion, appoint a disinterested and duly qualified physician or surgeon to make any necessary medical examination of the employee, and to testify in respect thereto. Said physician or surgeon shall be allowed traveling expenses and a reasonable fee to be fixed by the Commission, not exceeding ten dollars for each examination and report, but the Commission may allow additional reasonable amounts in extraordinary cases.

The fees and expenses of such physician or surgeon shall be paid by the employer.

FEES TO BE APPROVED BY THE COMMISSION

SECTION 64. (a) Fees for attorneys and physicians and charges of hospitals for services under this act shall be subject to the approval of the Commission; but no physician shall be entitled to collect fees from

an employer or insurance carrier until he has made the reports required by the Industrial Commission in connection with the case.

(b) Any person (1) who receives any fee, other consideration, or any gratuity on account of service so rendered, unless such consideration or gratuity is aproved by the Commission or such court, or (2) who makes it a business to solicit employment for a lawyer or for himself in respect to any claim or award for compensation, shall be guilty of a misdemeanor, and upon conviction thereof shall, for each offense, be punished by a fine of not more than $500.00 or by imprisonment not to exceed one year, or by both such fine and imprisonment.

FEE SCHEDULE

The fees in the following schedule are the ones which will ordinarily be approved by the Commission.

When charges are submitted to the Commission for approval the liability of the employer or insurance carrier will be determined by the injured person's standard of living with due regard to the severity of the injury, the nature of the treatment required, and the fee set out in the schedule.

By the term "standard of living" the Commission means the aggregate of several factors, including—

(a) Marital status and number of dependents.

(b) The patient's average weekly wage.

The employer's liability for treatment is limited to charges prevailing in the community for similar treatment of injured persons of a like standard of living when such treatment is paid for by the injured persons. (See Section 26 quoted on page three hereof.)

RULES GOVERNING THE APPLICATION OF THE FEE SCHEDULE

1. Reports as required by the Workmen's Compensation Act shall be made by the attending physician and/or hospital without extra charge.

2. Original reports must show in detail the nature and extent of injury and contain a full description of the treatment.

3. It is the duty of the physician to submit to the Commission and to the insurance carrier of self-insuring employer a report of progress at least every thirty days in all cases where disability exceeds this period. Approval of bills will be based largely on the information given in the written reports furnished during the progress of the case, provided the reports disclose the actual facts.

4. Final reports, on forms approved by the Commission, must contain a fully itemized statement of charges for treatment and describe the nature and extent of any permanent injury.

5. If the claimant suffers from any disability or disease independent of the injury, it is the physician's duty to inform the Commission *promptly*.

6. Where the schedule allows a flat fee, it is not permissible to charge additional fees for visits, dressings, treatment, etc.

7. In cases where no flat rate for full treatment has been provided charges for daily dressings or visits will not be allowed unless the necessity for the same is clearly shown. In such cases, and where reports show a high treatment frequency or protracted treatment, the Commission will reduce the per visit charge so as to bring the total cost within a reasonable flat rate for full treatment.

8. Charges for X-ray, infra-red light, high frequency or other electrical treatment, or physiotherapy will not be approved unless previously authorized by the Commission, and fees for such treatment shall be determined at the time of authorization.

9. Fees will not be approved for the services of more than one attending physician or surgeon over the same period of time, except by order of the insurance carrier, self-insuring employer, or the Industrial Commission.

10. Except in emergencies or where the condition of the patient might be endangered by delay, consent from the Commission or carrier must be obtained in advance where plastic or reconstructive surgery is contemplated or where open bone surgery in the later reduction of fractures is required. No bills for major surgery will be approved, even when authorized, until a copy of the hospital record of operation has been placed on file.

11. In ambulatory cases where the surgeon is paid a fee which includes the cost of drugs and materials for dressings, and such drugs and dressings were actually furnished by a hospital, the hospital will be required to look to the surgeon for payment.

12. Charges for a major surgical operation and incidental care (including herniotomy) will not be approved unless the operation was first authorized by the Industrial Commission, insurance carrier, or self-insuring employer, except in cases of emergency.

13. Flat fees shall not apply to cases which terminate fatally within one week after the date of injury, but the fees approved shall be based on the attention required.

FLAT RATE

Fees indicated as flat rate, full treatment, in connection with amputations, fractures and dislocations, include the full treatment necessary, and the ordinary dressings for the proper treatment shall be supplied by the attending physician.

SCHEDULE

AMPUTATIONS

FLAT RATE, INCLUDING AFTER CARE:

Thigh, at hip joint	$100.00
Thigh, between hip and knee	75.00
Leg, between ankle and knee	75.00

Foot, between ankle joint and metatarsal joint	50.00
Foot, through metatarsal bones	50.00
Arm, at shoulder joint	100.00
Arm, forearm or above elbow	60.00
Hand, at wrist	50.00
Hand, between wrist joint and carpo-metacarpal joints	50.00
Hand, through metacarpal bones	50.00
Finger or toe, at or proximal to distal phalangeal joint	25.00
Additional fingers or toes, at or proximal to the last phalangeal joints	5.00
Finger or toe, distal to the last phalangeal joint	15.00
Additional fingers or toes, distal to the last phalangeal joint	5.00

(All amputations are such as require suturing of the stump.)

Where more than one amputation (exclusive of fingers or toes), the major fee plus 50% of the cost of the others as herein classified.

FRACTURES

FLAT RATE, INCLUDING REDUCTION AND AFTER CARE:

Humerus	$ 75.00
Forearm, one bone (shaft)	25.00
Forearm, both bones (shaft)	45.00
Forearm, Colles	35.00
Femur (shaft)	125.00
Femur (neck)	125.00
Lower leg, Fibula	25.00
Lower leg, Tibia	50.00
Lower leg, both bones (shaft)	75.00
Lower leg, (Potts)	50.00
Ribs, one or more	10.00
Jaw, lower, simple and uncomplicated	25.00
Jaw, upper, simple and uncomplicated	15.00
Jaw, with complications and requiring splints and appliances	50.00
Jaw, when temporal mandibular joint involved	75.00

It is recognized that in cases involving complicated fractures of the jaw the doctor will refer them to a dental surgeon or to an orthopedic surgeon. In such cases concurrent fees for the doctor and the dentist or orthopedic surgeon will not be approved unless authorized in advance by the Commission as the circumstances of the case may require.

Patella	25.00
Patella, open reduction	75.00
Pelvis, any one bone, simple and uncomplicated	50.00
Pelvis, two or more bones, simple and uncomplicated	75.00
Carpals, one or more, simple and uncomplicated	25.00
Tarsals, one or more, simple and uncomplicated	30.00
Metatarsal	15.00
Metacarpal	15.00
Metatarsal, two or more	25.00
Metacarpal two or more	25.00
Finger	10.00
Each additional finger	5.00
Toe	10.00
Each additional toe	5.00
Coccyx	10.00
Sacrum	25.00

Sternum	15.00
Spine, process	15.00
Spine, body	100.00
Spine, lamina	50.00
Scapula, without displacement	20.00
Clavicle	25.00
Nasal bones	25.00
Skull, simple, including treatment of concussion, etc.	50.00
Skull, requiring decompression	100.00
Skull, compound, including craniotomy	150.00

Compound fracture 50% extra.

Open reduction (except patella and skull) 50% extra.

Operations for delayed union must be first authorized by the Industrial Commission.

Where multiple fractures occur (exclusive of fingers or toes or nasal bones), the major fee plus 50% of the fee prescribed for each of the others herein classified.

Cost of cast materials not included in foregoing fees.

DISLOCATIONS—REDUCTION OF

FLAT RATE, FULL TREATMENT, INCLUDING AFTER CARE:

Shoulder, uncomplicated	$25.00
Shoulder, complicated	35.00
Elbow, one bone	25.00
Elbow, both bones	35.00
Wrist	20.00
Hip	50.00
Knee, to include semilunar cartilage	35.00
Patella	10.00
Ankle	25.00
Clavicle	15.00
Finger	5.00
Each additional finger	5.00
Toe	5.00
Each additional toe	5.00
Jaw	10.00
Ribs, one or more	10.00
Coccyx	5.00
Metacarpal, one or more	10.00
Metatarsals	10.00
Carpal, one or more	15.00
Tarsal, one or more	20.00

In case of more than one dislocation (exclusive of metatarsals) the major fee plus 50% of the fee prescribed for each of the others herein classified.

No additional fee shall be allowed for the treatment of cuts, contusions, abrasions, etc., adjacent to the point of amputation or fracture.

SPECIAL OPERATIONS

Herniotomy (single), including after care	$ 75.00
Herniotomy (double), including after care	100.00
Injection Hydrophobia, full treatment (21 doses)	42.00
Transfusion of blood when donor furnished by the patient	35.00
Repair of small wound (one or more) and dressing where no suturing required	3.00
Abscess incision, and dressing	5.00
Rupture of tendon, one or more, not to exceed	$10.00 to $100.00

EXAMINATIONS

Physical examination and written report by *other than* the attending physician	$ 5.00
Complete neurological examination and written report, when authorized by the Commission	25.00

X-RAY EXAMINATIONS AND FEES

By examination is meant making Roentgenograms and fluoroscopic studies when necessary for diagnosis. The fee for the examination shall include a written report which must be filed before any charge will be approved. The Industrial Commission reserves the right to have films referred to it for examination. Fees will be allowed for only such pictures as are readable.

Extremities	$ 5.00
Fingers or toes	3.00
Skull	10.00
Ribs, single plate	7.50
Spine	15.00
Clavicle or shoulder joints	5.00
Hips	10.00
Pelvis	10.00

NOTE: These are charges for examinations regardless of the number of films used or the number of views taken, except as otherwise noted.

An additional fee of 50% of those herein indicated will be allowed for subsequent X-ray examinations if such are shown to have been necessary.

It is expected that two views will be made in the original examination of a fracture of the skull, thigh, knee, leg, arm, foot or hand.

Fees will not be allowed for more than two examinations for "check-up" during restoration unless specially authorized by the Commission or carrier.

ORDINARY FEES

Anaesthetic, spinal or ether	$ 5.00
Anaesthetic, gas	7.50
Ordinary first aid, at office	3.00
Day visits, at office, each (See Rule No. 7)	$1.00 to 2.00
Day visits, at home, each (See Rule No. 7)	$2.00 to 3.00
Hospital visits, each (See Rule No. 7)	1.50
Night visits, allowed only when necessary, each	5.00

The fees include ordinary dressings for proper treatment to be supplied by the attending physician.

Fees for more than one visit a day at a hospital will not be approved unless the necessity therefor is clearly shown. The same is likewise true of charges for consecutive daily visits.

Fees on the basis of the number of visits will not be approved in cases involving amputations, fractures, dislocations or other conditions for which a flat rate for full treatment has been specified.

For calls outside the city limit, the regular visit fee, plus an allowance of ten cents to twenty-five cents per mile for the entire distance traveled.

Fees for mileage carrying a patient to a hospital or to another doctor for consultation will not be approved unless the patient's condition was such as to require the attendance of a physician while making the trip.

CASTS

Fees for full treatment include the *application* of all necessary casts, but for the physician, or hospital, furnishing the materials, allowance will be made as follows:

Whitman's Abduction Spica (fracture of neck of femur)	$15.00
Hip Spica—including foot (fracture of neck femur)	10.00
Short Hip Spica—low back injuries and pelvic injuries	7.50
Shoulder Spica—fracture of upper humerus	10.00
Plaster Jacket—fracture of spine	7.50
Leg Cast—including foot—fracture of leg, etc	5.00
Leg Cast, below knee	3.00
Arm Cast, forearm fracture	2.00

FEE SCHEDULE FOR PHYSICIANS SPECIALIZING IN DISEASES OF THE EYE

Ordinary removal of foreign body:	
(a) Attached to cornea or conjunctiva, but not embedded	$ 2.00
(b) Simple embedded, in conjunctiva	3.00
(c) Simple embedded, in cornea	5.00
Localization of foreign body inside the eyeball, when necessary	25.00
Extraction of foreign body from inside the eyeball (anterior chamber) with or without magnet	50.00
Extraction of foreign body from inside the eyeball (posterior chamber) With or without magnet	75.00
Enucleation of eyeball, which must include implantation, including after care	75.00
Iridectomy, including after care	75.00
Complete Ophthalmological examination and report	10.00
Refraction, when authorized by the Commission	5.00
Office visits	2.00
Home visits	3.00
Hospital visits	3.00

FEE SCHEDULE FOR HOSPITALS AND NURSES

Hospitals shall be paid the fees *regularly charged* their *private patients* for *similar treatment,* but in *no case* to exceed the rates hereinafter set out, *which are maximum.*

Hospital rates include rooom and board, general nursing, ordinary dressings and medicines.

Ward bed, or bed in semi-private room, per day, not to exceed	$ 4.00
Private room, per day, not to exceed	5.00
Operating room	$2.50 to 10.00
Board of special registered nurse, per meal	33 1-3c

Charges for other services, as, for instance, laboratory or X-ray work, must be approved by the Industrial Commission before payment.

Charges for a private room will not be approved unless and until it shall have been shown that private room treatment was necessary.

No fees for hospital care for more than one day will be approved where the proof on file indicates that claimant is ambulatory, unless the case is unusual in nature, in which event the attending physician shall explain in detail why additional hospital care was given.

When a claimant has reached the state where further hospital residence becomes a matter of personal convenience only, it is the duty of the hospital superintendent or executive to notify the Commission at once. When a claimant is confined to a hospital for an extended period, bills must be filed monthly. The Commission may require hospital records for examination.

No hospital's bill will be accepted unless a brief history of the case sufficient to show the nature of the injury and character of the treatment is given on the face of the fee bill blank or attached thereto.

In cases of *urgent necessity* a special graduate or registered nurse may be furnished for not to exceed seven days. Written authority must be obtained in advance for all services in excess of seven days. The fee for twelve-hour duty is $5.00 or twenty-hour duty $7.00.

Fees for practical nursing service by a member of claimant's family or anyone else will not be honored unless written authority has been obtained in advance. The fee in each case will be fixed by the Commission.

The Commission reserves the right to reject bills for hospital, medical or nursing care unless proof submitted clearly shows the necessity of the service charged for.

DENTAL FEES

Extracting each tooth without anaesthetic	$ 1.00
Extracting each tooth with anaesthetic	2.00
Extracting each tooth after first, same sitting	1.00
Extracting when chloroform or ether is demanded, in addition to physician's fee, one tooth to five	5.00
Each additional tooth to nineteeth tooth	1.00
Preparing mouth for denture	20.00
Bridge work, per tooth, abutments counting same as teeth, six anterior teeth	10.00
Bridge work, per tooth, bicuspids and molars	12.50
Inserting one tooth on rubber	10.00
Inserting each additional tooth to five teeth	1.00
X-rays, $2.00 first picture, full mouth	10.00
Inserting full upper or lower set in rubber	25.00
Replacing one tooth on gold or rubber	3.00
Replacing each additional tooth, same heat	1.00
Lingual bar plates bent clasps	40.00
Reduction of simple fracture of jaw, with splint application, flat rate for full treatment	50.00
Reduction of fracture of jaw, involving temporal mandibular joint	75.00

LOSS OF VISION

The following table, according to the Snellen Notation, is the one used by the North Carolina Industrial Commission for determining the percentage of loss of vision. Of course, loss in muscle function may in conjunction with other factors indicate a greater percentage of loss of vision.

Snellen Notation for Distance	*Snellen Notation for Near*	*Percentage of Visual Efficiency*	*Percentage Loss of Vision*
20/20	14/14	100.0	0.0
20/25	14/17.5	95.7	4.3
20/30	14/21	91.5	8.5
20/35	14/24.5	87.5	12.5
20/40	14/28	83.6	16.4
20/45	14/31.5	80.0	20.0
20/50	14/35	76.5	23.5
20/60	14/42	69.9	30.1
20/70	14/49	64.0	36.0
20/80	14/56	58.5	41.5
20/90	14/63	53.4	46.6
20/100	14/70	48.9	51.1

20/120	14/84	40.9	59.1
20/140	14/98	34.2	65.8
20/160	14/112	28.6	71.4
20/180	14/126	23.9	76.1
20/200	14/140	20.0	80.0
20/220	14/154	16.7	83.3
20/240	14/168	14.0	86.0
20/260	14/182	11.7	88.3

Vision less than indicated above is deemed to be industrial blindness.

NOTE—Loss of vision must be based upon the reading *without* the use of a corrective lens.

Dr. Bulluck made a motion that a vote of thanks from the entire medical profession be given this committee for the best work that has ever been accomplished on a most difficult problem. Motion seconded and unanimously carried.

A telegram from Dr. Pace was read expressing regrets at not being able to attend and requesting the doctors to write friends in Wake County to support Dr. Lawrence for candidate to the House of Representatives. Dr. McBrayer stated Dr. Lawrence is so intensely interested in endeavoring to take care of the medical profession in the General Assembly that he reached the conclusion that he could serve the profession better if he were a member of the House.

No further business appearing before the Executive Committee Dr. Ringer declared the meeting adjourned and expressed the hope of seeing all the members in Asheville.

Respectfully submitted,

L. B. McBRAYER, *Secretary.*

PRESIDENT RINGER: We now come to the report of the Secretary-Treasurer, which will be presented by Dr. McBrayer.

SECRETARY McBRAYER: Dr. Klutz, things that are of importance are touched on in this report.

. . . Secretary McBrayer then presented his prepared report. . . (Applause)

ANNUAL REPORT OF THE SECRETARY-TREASURER

L. B. McBRAYER, M.D., F.A.C.P.

Mr. President, and Gentlemen of the House of Delegates:

According to law and custom I herewith present for your consideration and approval the annual report of the Secretary-Treasurer.

I shall endeavor to leave untouched in this report anything that has been covered by the President in his message and likewise anything that may come within the purview of the Finance Committee as all such will be covered in their reports and the roport of the Audit which is made to and for the Finance Committee.

It has been a pleasure to work with President Ringer this year. He is a fine student, with plenty of brains well trained for use and during the year and before he has used them in solving the problems that have arisen from day to day during his term of office, to the betterment of our profession. Every member of the Medical Society of the State of North Carolina owes him a debt of gratitude for services rendered in which I join most heartily.

AUTOMOBILE INSURANCE

We have secured automobile insurance with the usual coverages that may be had through the Farm Bureau Mutual Automobile Insurance Company of Columbus, Ohio, their representative located at Albemarle, N. C., at a reduction of 30% over the usual charges, these reductions coming at the end of the first year of coverage in what they call dividends. These reductions are only available to members of our Society.

FIRE INSURANCE

We have secured Fire Insurance for our members in the Hardware Mutual Fire Insurance Company of Charlotte, N. C., at a saving of 40% payable in dividends at the end of the life of the policy, be it one or three years. Your secretary is carrying his automobile and fire insurance in these companies. It is entirely optional with the Fellows whether they accept this saving or not—no compulsion whatever.

The matter of suits where malpractice is claimed is increasing all the time in our state. In the United States last year there were 4,000 of these suits brought against physicians. In some researches done on this subject it was found that the most frequent cause of these suits were unguarded remarks or in some instances ugly criticism by a physician who follows in the case or in some other case that gives him access to the family. In my opinion, whether the doctor is in error or no, such criticism by the doctor is the most flagrant and vicious violation of the code of medical ethics and the laws and rules of common decency—and such a physician should be brought to trial in his County Society and if found guilty should be expelled from his County Society, which would automatically expel him from every branch of organized medicine and the term of punishment should be forever.

We have secured from the Aetna Insurance Company (see your local agent), an opportunity for the Fellows of this Society to secure insurance in such amounts as they may desire against malpractice suits at a reduction of premium charges amounting to 30% plus, again this is not compulsory, simply take it or leave it as you like. However, if you do care to take advantage of these savings the amount will total five to twenty or more times the amount of your annual dues, depending on the amount of insurance you carry. If you are interested in this saving or if you are not you certainly have no reason for grumbling about paying dues to the State Society.

INDUSTRIAL COMMISSION

Dr. Donnell B. Cobb is Chairman of this committee which has completed its work and will make its own report. You should have your memory refreshed however as to the work that has been required to make the conditions of this industrial work more satisfactory and secure the increase in remuneration therefor. You will remember that the rulings of the Commission at one time were so obnoxious to the profession that a young war was almost in the sweep of one's vision, or maybe you have forgotten this period; if so it is good, if not let's do it now.

When Dr. John B. Wright was President in 1932-33 he visited every County Medical Society in the state and discussed with them among many other things, the unsatisfactory relations between the Industrial Commission and the profession. Following, Dr. Manning's administration took up what seemed at times to be a "forlorn hope." Gov. Ehringhaus stepped into the breach without whose help nothing could have been accomplished. We are under everlasting gratitude to him for the appointment of Mr. Harry McMullan to the vacancy caused by the retirement of Mr. Allen—I trust every doctor remembers this and will lend any support that he may to both Gov. Ehringhaus and Mr. McMullan. And the report of Dr. Cobb and his committee will show the last of the successful work done. And everything is satisfactory in both camps. Don't think that all of this "just happened"—not by any manner of means, things worth while don't "just happen." This work continued quite actively through Dr. McCain's administration and is just "signing off" in the closing hours of Dr. Ringer's administration. Many were the drives to and from Raleigh for conferences, committee meetings, etc. Our thanks are also due Dr. Hubert B. Haywood for his valuable assistance—and let us express the hope that this is writing "finis" to all disagreements between the profession and the Industrial Commission, and if this shall come to pass the individual doctors have a large share of responsibility therein as the days come and go.

I am informed that we secured higher fees from the ERA than many or some of the doctors charge their private patients. I am also informed that a few of the doctors send in their bills to the Industrial Commission at a lower rate than has been agreed to. The natural reaction is if doctors vountarily want to do the work for less than has been agreed to, why should we pay more. The only answer is such doctors are working against themselves and every other doctor who does work for the Industrial Commission—and are interfering with the smooth coöperation between the individual physicians and the Industrial Commission. It is likely that such action would be sufficient cause for preferring charges against such an one. Fortunately for our profession in North Carolina we have few such. I am reliably informed that the action above mentioned caused your committee to be unable to secure a better fee for visits than was necessary to accept. The officers and committee of your Society have done a fine piece of work and it remains for the individual members of our Society to live according thereto or wreck the car to their own hurt as well as the

hurt of every other member, and further bring himself and each member into disrepute with every layman who becomes familiar with such conduct. Our Society through its Executive Committee and committees appointed by it made satisfactory arrangements with the FERA to pay the profession for medical care to their clients, none of whom were at the time able to pay for medical services and we cared for these for nearly a year before your Society through its committees got consent of the ERA to pay for same at a certain per cent of a reasonable fee—even at that, the ERA reports that they paid the physicians of the State about one and a half million dollars for the work they did; that would be $1,000 per member. The Legislative Committee of your Society secured the passage of a bill through the last General Assembly giving physicians, hospitals and nurses a lien on all recoveries from automobile accidents and such like accidents to secure payment for medical services, etc., either on amounts paid by compromise or court procedure.

An insurance man told me last Thursday that if one-half of our members carried liability insurance against malpractice suits with the company that gives us a reduction they would save $10,000.00 annually. One of our members is saving $1,000 annually by carrying his fire insurance in the company with which we have an agreement. This one year's saving is sufficient to pay this member's annual dues for 100 years.

But for the watchfulness and activity of your Committee on Legislation, one of our county societies would have any and all the cults running their hospital, training school for nurses, etc. This bill was what is known as a local bill, that is, only covers the representative's county who introduces it, these are not usually read when placed on passage, except the title, which in this instance seemed perfectly harmless. Only by reading *every bill* can such nefarious things be picked up and passage prevented, using whatever methods and approach that may be necessary. In this instance, the doctors in the representative's county, when informed, turned the trick with the help of the Chairman of our Legislative Committee.

Who discovered the prevention of smallpox by vaccination and who used it immediately following its discovery? It wasn't social workers, was it? Who was it who hurried to Philadelphia to help care for those stricken in the epidemic of smallpox that killed one-half of the population of the city? No, not social workers or even the lay brain trust, but the physician —who did the same thing in the terrible epidemics of yellow fever at New Orleans and Memphis? The same group, the physicians. Who built the Panama Canal? General Gorgas, made possible by the discovery of the method of transmission of yellow fever by Walter Reed and the others working with him. Did the brain trusters make this discovery, did the social workers direct these researches? Nay, nay. Did the nurses do it? Again we say no. None of these live in this atmosphere, have never breathed it one time. Who built the hospitals in our State? Up to a few years ago the doctors of North Carolina with their own money and what they could borrow, built every hospital in North Carolina except four, and without

whose knowledge and skill they would be useless for a single hour, but at these annual meetings for the purpose of heaping encomiums on a large contributor to the maintenance of some of these hospitals, the physicians who made these hospitals possible in the beginning and continue to make them possible, receive not a thought much less a word of praise. In the World War did our Government find it necessary to conscript physicians? No, from the most noted physicians to the young embryo who had just received his diploma, were ready to go and did go when and wherever needed. There was such unanimity, that our Government found it desirable to organize in each state what was called "The Volunteer Medical Service Corps" and the duty of the State Committee, appointed by our Government through and by a physician already in the service, was to select the doctors who should stay and take care of our people here and also those who could be spared to go to the war, so that every physician in the United States volunteered for service, either here or over there as the needs existed. And no war has ever been waged in any part of the world, where so little disease was had and where such good care was given the injured. The whole medical profession with all its brains, its knowledge and all its skill, volunteered "'til it was over over there." Notwithstanding the foregoing the Social Security Act that was passed by the last Congress had as a part thereof regulations of the practice of medicine. It provided for the pay of physicians for medical service to those covered by the Act, the whole thing being administered by laymen, i.e., there would be more than one layman to each physician whose duty among other things would be to tell the doctor what patients to treat, when and how to treat them and when not to treat them. There was such a hard fight made on this by your Legislative Committee and Executive Committee, the same from many other states, and by the American Medical Association officials at Chicago, this part of it was abandoned but only temporarily, and it will no doubt be brought up again in the next ssesion of Congress. Dr. Andrew P. Biddle of Detroit said recently in speaking of combatting this thing: "As most these and such like suggested changes will have to pass through our State Legislature before becoming law, I would urge that the doctors enter these halls, that their counsel may wisely guide their fellow members in matters medical." Our Chairman of Legislation has been begging for this very thing, and with such little success that he is now a candidate for the House in his County of Wake. We may get Dr. T. W. M. Long in the Senate from Halifax and Dr. C. A. Peterson from Mitchell; the least we can do is to help them both in the primary and the election. Dr. Lawrence says we need a minimum of five capable doctors in the Senate and ten or fifteen in the House.

The Medical Society of the State of North Carolina is a great potential force, when that force is extended in the right direction. Great leadership is required—however, mere leadership will not suffice, but we must have unanimity of purpose, not necessarily unanimity of opinion, though this is desirable, to bring the greatest good to every member of our Society

and the people of our State. Is it too much to hope and expect that every fellow of this Society will join with every other fellow in this unanimity of purpose.

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

President Ringer: We will now have the report of the Finance Committee which will be presented by Dr. Julian Moore.

Mr. President and Members of the House of Delegates:

The Committee on Finance wishes to make the following report.

The Treasurer's books were audited by Everett, Zane and Muse of Sanford, N. C., and their detailed report is appended herewith. Their report shows the finances of the State Society to be in a healthy condition, the first time in many years. This happy situation is the result of contributions of $2,066.04 by various members of the Society during the year 1935. On January 1, 1936, an unexpended cash balance of $640.15 was shown. The Executive Committee voted to allocate this fund to the use of the Legislative Committee.

Your Committee on Finance has submitted the following budget for the year 1936, to the Executive Committee.

Estimated Income	$12,000.00	
Stationery of all offices except secretary		$ 100.00
Councillors—Travel expense in district		250.00
Other committees		1,000.00
Legislative Committee		2,500.00
President's office—Travel and miscellaneous expenses		400.00
Secretary's office—		
Salary of Secretary		1,200.00
Clerical assistance		1,000.00
Stationery		100.00
Rent		300.00
Travel expense		300.00
Miscellaneous expense		500.00
Transactions—		
Reporting and preparation of copy		150.00
Printing and binding		2,500.00
Expenses of state meeting		500.00
Total		$11,500.00
Possible surplus	$500.00	

By action of the Executive Committee several changes in the budget were adopted, so that the budget for the year 1936 as amended by the Executive Committee is as follows:

RECEIPTS

Expected income for dues	$12,000.00
Expected sale of exhibit space	500.00
Appropriated to legislative committee from last year's balance	640.15
Total income (estimated)	$13,140.15

EXPECTED EXPENSES

Stationery for all officers except secretary		$ 100.00
Councillors—Travel expense in districts		250.00
Other committees		1,000.00
Legislative committee—		
Appropriate 1935 balance		640.15
New appropriation		2,500.00
President's office—Travel and miscellaneous expenses		400.00
Expenses delegates to A. M. A.		200.00
Secretary's office—		
Salary		1,200.00
Clerical assistance		1,000.00
Stationery		100.00
Rent		300.00
Travel expenses		600.00
Auditing books		50.00
Miscellaneous		450.00
Emergency fund		500.00
Transactions—		
Reporting and preparation of copy		250.00
Printing, binding and mailing		3,000.00
Expenses of State meeting		500.00
Expenses speaker of meeting		50.00
Total expenses		$13,090.15
Expected surplus	50.00	

Your present finance Committee has served in this capacity for three years. When we began to function we found that the Secretary's accounts were accurate. However, there was a poor system of bookkeeping. A better system of bookkeeping was installed. Never in the history of the State Society had all legitimate expenses been paid for by the Society. All of the officers and committees paid their expenses out of their own pockets, except the Secretary who has, as a rule, paid part of his expenses out of his own purse.

The committee had no past experience to guide them in estimating what the legitimate expenses of the Society would be, as those expenses borne by individual members were never recorded. This committee has budgeted the receipts of the Society, and in a way, have planned the expenditures to take care of all legitimate expenses.

In order to simplify the work of the Finance Committee, we recommend that all officers and committeemen keep an accurate record of expenses incurred and forward them to the Secretary.

The generous contributions of various members of the Society has gotten us out of debt. The increased income from dues should enable the Society to pay all of its expenses this year and no officer or committeeman should find it necessary to pay his expenses while on Society business out of his own purse.

In as much as the Executive Committee is the governing body of the Society when the House of Delegates is not in session, which means 362 days out of the year, this committee feels that the work of the Finance Committee should be a part of the functions of the Executive Committee. So far the Finance Committee has only served in an advisory capacity, reporting to the Executive Committee its recommendations. We believe that the functions of the Finance Committee can be better performed by a subcommittee of the Executive Committee. Therefore, we submit the following recommendation for your approval.

The President shall appoint three members of the Executive Committee who shall serve as a Finance Committee and shall report their recommendations to the Executive Committee.

JULIAN A. MOORE, *Chairman,*
VANCE P. PEERY,
By J. A. M. (authorized by letter),
WM. M. COPPRIDGE.

March 6, 1936.

Dr. Julian A. Moore,
Chairman of Finance Committee,
The Medical Society of the State of North Carolina,
Asheville, N. C.

Sir:

In accordance with your instructions, we have examined the books of record of your Secretary-Treasurer, Dr. L. B. McBrayer, Southern Pines, N. C., covering the calendar year of 1935 and for the purpose of verifying and reporting upon the cash receipts and cash disbursements.

EXHIBIT A herein reflects the cash receipts and disbursements, summarized as follows:

	Budget	*Actual*	*More or Less Than Budget*
Total Receipts	$7,755.67	$9,528.42	M$1,772.75
Estimated Budget Deficit	268.34		L 268.34
Total	$8,024.01	$9,528.42	M$1,504.41
LESS:			
Total Disbursements	$8,024.01	$8,919.40	M$ 895.39
Receipts Exceeding Expenditures		$ 609.02	M$ 609.02
Add: Bank Balance Jan. 1, 1935		31.13	
Total Bank Balance, Dec. 31, 1935		$640.15	
Of which amount unexpended appropriations of the Legislative Committee amount to		388.80	
Leaving an unappropriated cash balance of		$251.35	

EXHIBIT B herein reflects the disbursements in detail and are compared with the budget appropriations made therefor.

SCHEDULE 1 reflects a reconciliation of the Treasurer's bank account.

The cash receipts, as reflected by the books of record, were traced to deposits in bank, and all disbursements were evidenced by cancelled checks which were examined.

Respectfully submitted,
EVERETT, ZANE AND MUSE,
By John C. Muse,
Certified Public Accountant.

JCM/L

EXHIBIT A

CASH RECEIPTS AND DISBURSEMENTS

January 1, 1935, to December 31, 1935

RECEIPTS

	Budget	*Actual*	*Over or Under**
Dues		$7,449.00	
For Legislative Committee and Deficit		2,066.04	
Sale of Transactions		4.00	
From A. M. A. for News Notes		2.25	
For Deficit when Bank Closed		7.13	
Total Receipts	$7,755.67	$9,528.42	$1,772.75
Budget Deficit	268.34		268.34*
ADD:			
Bank Balance, January 1, 1935		31.13	31.13
Total	$8,024.01	$9,559.55	$1,535.54

DISBURSEMENTS

See Exhibit B for Detail	$8,024.01	$8,919.40	895.39
ADD:			
Bank Balance, Dec. 31, 1935 (See Below)			
Appropriated	$338.80		
Unappropriated	251.35	640.15	640.15
Total	$8,024.01	$9,559.55	$1,535.54

ALLOCATION OF CASH BALANCE

Receipts for Legislative Committee and Deficit		$2,066.04
DEDUCT:		
Balance Deficit December 31, 1934	$ 33.90	
Budget Deficit 1935	268.34	
Legislative Committee Disbursements	875.00	
Balance on Northington Judgment	500.00	1,677.24
Balance Appropriated for Legislative Com.		$388.80
Unappropriated Balance		251.35
Total Cash Balance		$640.15

Exhibit B

Cash Disbursements

January 1, 1935, to December 31, 1935

	Budget Appropriation	Actual Disbursement	Over or Under* Disbursed
Chairman of Sections:			
Stationery	$ 40.00	$ 21.00	$ 19.00*
Councillor:			
Stationery	$ 45.00	$ 24.00	$ 21.00*
Travel		6.00	6.00
Total	$ 45.00	$ 30.00	$ 15.00*
Executive Committee:			
Luncheons		$ 27.95	$ 27.95
Travel	$ 600.00	396.06	203.94*
Total	$600.00	$ 424.01	$ 175.99*
Other Committees:			
Travel (Committee on Fee Bill)	$ 300.00	$ 20.00	$ 280.00*
Clerical and Other		10.20	10.20
Total	$ 300.00	$ 30.20	$ 269.80*
Legislative Committee:			
Dr. B. J. Laurence	$ 500.00	$ 875.00	$ 375.00
Dr. J. M. Northington— Balance on Judgment		500.00	500.00
Total	$ 500.00	$1,375.00	$ 875.00
President's Office:			
Stationery	$ 15.00	$ 10.00	$ 5.00*
Telephone, Telegraph and Postage	25.00	30.00	5.00
Travel	300.00	300.00	
Total	$ 340.00	$ 340.00	
Secretary's Office:			
Salary	$1,000.00	$1,000.00	
Clerical Assistance	1,000.00	1,012.50	$ 12.50
Stationery	100.00	55.59	44.41*
Rent, Light and Water	300.00	320.00	20.00
Travel	500.00	686.76	186.76
Telephone and Telegraph)		130.31)	
Postage)		116.13)	
Office Supplies)	400.00	31.55)	32.06
Janitor)		62.47)	
Extra Clerical)		62.47)	
Miscellaneous)		15.60)	
Emergency Fund)	300.00		300.00*
Total	$3,600.00	$3,506.91	$93.09*
State Meeting:			
Expenses	$ 185.35	$ 188.72	$ 3.37

TRANSACTIONS:			
Reporting	$ 58.16	$ 58.16	
Preparation of Copy	55.50	62.23	$ 6.73
Printing, Binding and Mailing	2,300.00	2,814.71	514.71
Total	$2,413.66	$2,935.10	$521.44
MISCELLANEOUS:			
Audit		$25.39	$25.39
President's Jewel		17.32	17.32
Floral Wreaths		25.75	25.75
Total		$68.46	$68.46
Totals (To Exhibit A)	$8,024.01	$8,919.40	$895.39

SCHEDULE 1

RECONCILIATION OF BANK ACCOUNT

December 31, 1935

The Citizens Bank & Trust Company,
Southern Pines, N. C.

Balance as per Books			$640.15
Balance as per Statement		$659.15	
Less, Outstanding Checks:			
No. 496	$6.00		
No. 498	7.00		
No. 505	6.00	19.00	
		$640.15	
Balance (To Exhibit A)			$640.15

By order Ex. Com. balance goes to legislative fund for use legislative committee.

PRESIDENT RINGER: Gentlemen, you have heard the report of the Finance Committee. What do you wish to do with it?

. . . It was moved and seconded that the report be accepted. . .

PRESIDENT RINGER: It has been moved and seconded that this report be accepted. Is there any discussion of it as a whole, or any part of it? If not, are you ready for the question?

. . . The motion was put to a vote, and carried. . .

PRESIDENT RINGER: I did not think that it was necessary to call for a vote from the floor on Dr. McBrayer's very illuminating Secretary's report and therefore I will not do so.

We are now going to have a short recess, not from our labors, but from our close formation here, for the purpose of selecting a Nominating Committee. We will go into recess for five minutes. All the delegates from the various districts will gather together and select one of their number to represent them on the Nominating Committee and then turn in the name of that person to this table. Will you please be as expeditious as

possible, as we do not want to delay the further progress of the meeting? We still have a good deal to do.

Dr. J. W. Davis: The Iredell-Alexander Medical Society has instructed me to present this resolution to this meeting: that while we are grateful to the people of Pinehurst for their invitation, and appreciate it, yet we feel that it is better that we meet in any one of the following cities: Wilmington, Raleigh, Durham, Greensboro, Winston-Salem, Charlotte, or Asheville.

I wish to offer that resolution tonight for your consideration.

I was further instructed to say that if any delegate wishes to add his city to that list we will be glad to add it, provided it is on a main railroad line and that it has ample hotel facilities.

President Ringer: Is there a second to that resolution?

. . . The resolution was duly seconded. . .

President Ringer: Is there any discussion?

Dr. Benj. J. Lawrence: Mr. President, I don't think the members are very clear as to what they are voting on. Would it be in order to delay the vote on that matter until after this recess and the selection of the Nominating Committee?

President Ringer: I think that would be better. As a matter of fact, when Dr. Davis got up and I recognized him I thought the resolution he was going to offer had something to do with this matter of the Nominating Committee.

If you don't mind, Dr. Davis, will you postpone that until after the selection of the Nominating Committee?

Dr. Davis: I shall be glad to do so.

. . . The meeting thereupon went into recess for the purpose of selecting members for the Nominating Committee. . .

President Ringer: If you gentlemen have finished your deliberations, will you bring the names up here to the desk?

The following is the Nominating Committee that has been selected by you gentlemen:

First District, Dr. W. W. Johnston; Second District, Dr. Paul Whitaker; Third District, Dr. Houston Moore; Fourth District, Dr. Geo. W. Mitchell; Fifth District, Dr. J. F. Highsmith; Sixth District, Dr. H. A. Newell; Seventh District, Dr. J. A. Elliott; Eighth District, Dr. J. B. Whittington; Ninth District, Dr. J. W. Davis; Tenth District, Dr. C. C. Orr.

These gentlemen will organize and select their own Chairman, decide upon the nominations prescribed, and report at the last meeting on Wednesday afternoon at two o'clock. The Secretary suggests that at the close of this meeting all the members of the Nominating Committee meet in this corner for purposes of organization.

We have several committees that are to report here. I am not unmindful of the resolution that Dr. J. W. Davis of Statesville wished to introduce but I think that properly comes under "New Business," so we will postpone it until we reach that on our order of business.

The next on the order of business is the report of the Committee to Confer with the Industrial Commission in Regard to Minimum Fee Schedule, which both the Secretary and I mentioned in our respective reports. Dr. Donnell B. Cobb, of Goldsboro, is Chairman of that Committee. We are glad to have Dr. Cobb here, because that is one of the committees that has done some of the best work that has been done in a long while for the Medical Society of the State of North Carolina.

Dr. Cobb!

. . . Dr. Cobb presented his report for this Committee, the report having previously been sent to Secretary McBrayer. . . (Applause)

REPORT OF ADVISORY COMMITTEE TO THE INDUSTRIAL COMMISSION AND THE COMMITTEE REPORTED TO CONFER WITH THE INDUSTRIAL COMMISSION IN REGARD TO MINIMUM FEE SCHEDULE

Mr. President and Members of the House of Delegates:

In 1934, during the administration of Dr. I. H. Manning, a Committee was appointed to confer with the Industrial Commission on contested medical bills and to render such other service in the administration of the Industrial Act as was possible. This Committee was composed of Drs. Frank C. Smith, Battle A. Hocutt and Donnell B. Cobb and has continued to function to the present time.

In 1935, during the administration of Dr. P. P. McCain, this Committee was augmented by the addition of Drs. Joseph B. Greene, J. Stuart Gaul, Hubert B. Haywood, Charles I. Allen and Benjamin J. Lawrence. The purpose of this larger Committee was to confer with the Industrial Commission in regard to a revision of the Fee Schedule.

Our meetings with the Commission were most friendly and the members of the Commission evidenced a sincere willingness to coöperate. Most of the dealings with the Industrial Commission were had while Mr. Harry McMullan was Chairman. He approached the various problems in a judicial attitude and not as one representing or especially interested in any special group. The members of the Medical Committee felt a genuine regret when he resigned his Chairmanship to assume the duties of the Assistant Attorney General. The new Chairman, Mr. J. Dewey Dorsett, has been a member of the Commission since its inception. Most of you know him. He assures us that he will conduct the affairs of the Commission with the same impartiality that he has shown in the past.

A copy of the revised schedule should be in the hands of all members of the State Medical Society by the time of this meeting.

This schedule does not contain all the changes that your Committee would like for it to contain. It does represent the best that can be accomplished under the circumstances. Time will not permit for a review of all these changes. We would like to call your attention to the fact that 29 per cent of the schedule fees have been increased an average of 45 per cent. When applied to the whole schedule of eighty items this increase amounts to slightly more than 13 per cent. One item has been reduced.

Your Committee urges all who do industrial work to become familiar with the changes that have been made in this schedule, to be guided by it in making their charges and to coöperate with the Industrial Commission that fairness may be had by all.

To the President and the House of Delegates we recommend the appointment of another committee to continue to act in an advisory capacity to the Industrial Commission at regular intervals during the next year.

DONNELL B. COBB, *Chairman*,
J. B. GREENE,
JOHN STUART GAUL,
H. B. HAYWOOD,
FRANK C. SMITH,
BENJ. J. LAWRENCE,
BATTLE A. HOCUTT,
CHARLES I. ALLEN.

PRESIDENT RINGER: You have heard the Doctor's report. What will you do with it?

DR. HENDERSON IRWIN (Wayne County): I move the report be approved.

DR. G. L. CARRINGTON (Alamance County): I should like to offer one amendment to the motion and that is that it include that the present Committee be continued—that the report be accepted, with that addition.

PRESIDENT RINGER: Do you offer that as an amendment to the original motion?

DR. CARRINGTON: I don't wish to impose on the present committee, but I would like very much to offer that amendment.

PRESIDENT RINGER: Dr. Irwin, do you accept that amendment?

DR. IRWIN: Yes.

PRESIDENT RINGER: Is the amendment seconded?

. . . The motion as amended was regularly seconded. . .

PRESIDENT RINGER: It has been moved and seconded that the report of Dr. Cobb's Committee be approved and that the Committee be continued. Is there any discussion?

. . . The motion was put to a vote and carried. . .

PRESIDENT RINGER: The Advisory Committee on the State ERA having completed its work is hereby discharged.

We will now proceed to hear the report of the Committee on Legislation, Dr. Benjamin J. Lawrence, of Raleigh, Chairman.

Dr. Lawrence!

Dr. Benjamin J. Lawrence: Mr. President, and Members of the House of Delegates: When we met about a year ago the long and tedious 1935 session of the Legislature was drawing to a close and no legislation other than that reported previously or that referred to by our distinguished Secretary earlier in the evening has come to our attention. The Committee has therefore directed its efforts during the past few months along the lines of a study of the questions pertaining to the welfare of the profession as a whole in the state.

Those efforts have consisted of conferences by letter and in person with various members of the present Legislature and also with prospective members of the new Legislature.

The President has rendered very valuable assistance, and the Secretary is always willing and anxious to do more than his share.

Your Committee feels that the profession is still faced with matters of grave importance and concern to us as a whole. During recent months some of us have been disturbed at times because certain people in high positions of trust, honor, and responsibility have seen fit to attack openly or by innuendo certain Government structures which you and I consider basic or fundamental in a free people's Jeffersonian democracy. We find ourselves, therefore, in the midst of a social and economic upheaval that has caught us and held us with a grip which has not thus far, or will not, let us go.

For a hundred and sixty years our country has grown from a mere beginning with a vast wilderness surrounded by savages to the greatest and the richest and the most prosperous nation in the world and it has done that under the leadership and under the plan laid down by its founders. During that time our beloved profession has grown great and it has expanded and has taken its proper place of leadership in scientific accomplishments, and we want to keep her in that place of honor.

We have reached the place in the affairs of men—one of those peculiar periods which occurs ever so often when men become restless and unstable, when they are easily swayed by current opinion—when things are happening so fast and furiously about us that we almost catch our breath and wonder in amazement.

It makes little difference what one may want to believe—it makes no difference what one would like the facts to be, if he is honest and if he will inform himself he will be forced or persuaded to the conclusion that we are passing through the greatest social and economic upheaval which has beset this country since the Civil War. He will surely reach the conclusion that sentiment is rapidly changing and that a radically different outlook is crystallizing in the minds of men both as regards the state of our profession and our duty to society and indeed of society itself.

Therefore, it is our responsibility to see that this new thinking gets the proper leadership, that it is directed along sane and conservative paths, and we cannot do that unless we make our influence felt at the very fountain-head itself where these changes are being wrought. It seems to me that we should teach the public and the new generation the potent part our profession has played in the development of this great nation and the development of its civilization.

I am utterly astonished at the strong trend toward socialized or state medicine which one is led to believe is rapidly developing. It would be utter folly for us as a trained and learned profession to hide our heads in the sand like the silly ostrich and say, "All is well," when in our souls we know that all is not well. People are not only thinking but they are boldly talking about this thing, and they are beginning to write about it.

Recently it was the subject of high school debate in every high school in this state and therefore it has been thoroughly introduced into the homes of the stable folks of our state who make up the backbone of and who compose the "wheelhorse" class of people in North Carolina, who would not have otherwise thought of such a thing for many years and would not have known about it for even a longer period.

We may as well recognize it for in my judgment we are going to have to deal with the thing in a concrete way in the not distant future.

The whole question is, what will we do with it? Will we stand together, locked by iron bands of a common interest, every man doing his dead level best and his full duty as he sees it in the sight of God and according to the light of the knowledge before him help to form and develop a workable plan, or will we, like the foolish virgins, wait until the door of opportunity is closed and have this thing done by a lay group of social welfare workers who do not understand us and who care less about the welfare of our beloved profession?

After they have proponded a scheme which has caught the public fancy it will be very much more difficult to deal with the situation. When they propose to provide "facilities for accurate diagnosis, obstetrical care, hospital care, home nursing, and the treatment of chronic disease," then the thing is before us and must be dealt with, if we as a profession are to be preserved.

We should take an active and painstaking interest in the selecting of of our Senators and of our Representatives. On previous occasions I have attempted to urge upon you the importance of and the necessity of placing a representative and concrete group of physicians in both House and Senate. It is not possible for all of us or for many of us to go into the halls of our law-making bodies, but it is possible for the doctors of North Carolina to make their influence felt there through their respective Senators and Representatives, if they will take the time and put forth the effort at the proper time.

I make bold the statement that no group of people in this or in any other state can wield so potent an influence as can the medical profession once they have become aroused and militant. It will be conceded that they are educated and that they are trained, and all that is necessary is that their efforts be directed along the proper channels.

I would not have you for one moment forget any of our ideals and our ideas. On the other hand, my plea is for a preservation of the traditions and the glory of our profession. It is high and it is noble and let us keep it that way by preserving the fundamentals.

"The high soul travels the highway,
The low soul gropes the low,
And on the misty flats between
The other souls move to and fro.
"To every man there openeth a highway
And a low,
And every man must choose which way
His soul shall go."

I want to thank my distinguished colleagues on this Committee, Dr. Frank Highsmith, Sr., and Dr. Paul McCain, for their splendid and painstaking coöperation and support during the past year. I also want to thank the President and the Secretary for their loyalty and for their helpful suggestions. And from the bottom of my heart I want to thank every member of this House of Delegates, and the members of the Society at large for their support, for their coöperation, for their sympathetic understanding, and for the marvelous manner in which they have stood by this Committee in its undertakings. (Applause)

President Ringer: Do I hear a motion from the floor to endorse this report of Dr. Lawrence?

. . . A motion to this effect was duly made and seconded. . .

President Ringer: It is moved and seconded that Dr. Lawrence's report be endorsed. Is there any discussion?

. . . The motion was put to a vote and carried. . .

Dr. D. M. McIntosh (McDowell County): Mr. President, I would like at this time to just say a few words to the House of Delegates along the lines of the report that we just listened to.

There is no doubt in our minds but that the Government has already stepped into the medical profession and it is in my opinion at least interfering with the free choice of physicians by patients. I refer especially to the methods that have been used in selecting physicians by the WPA to give assistance and render aid to those so unfortunate as to have to work on the various projects.

I don't think it is fair to the patients that one or two men should be selected, by people who are not in the medical profession, to take care of them in their illnesses. They have no voice on whom they are to call

but must use the physicians designated by some of the heads of the PWA or the WPA. I don't think it is fair. I don't think it is right. I believe the Government already has an entering wedge into the free choice of the people, and certainly they are interfering with the doctors.

I should like to see this convention take some action so that the people who are working for the Government in the WPA, the PWA, or whatever it is called, may have the right to use the physician of their own choice, just like, we have learned, they may now select their own physician if they happen to be working for private corporations.

I certainly would like this House of Delegates tonight to take some action in some way so that these people may have the right to choose whom they please to give them aid when they are injured.

President Ringer: Is there any further discussion along the lines initiated by Dr. McIntosh?

Dr. McIntosh: I should like to say that my County Society adopted resolutions along the lines that I have just spoken.

President Ringer: Is there any further discussion? Do you wish to put that in the form of a motion, Doctor?

Dr. McIntosh: I do.

President Ringer: Will you state the motion, please?

Dr. McIntosh: I would like to move that this body go on record as being opposed to the methods now in use, requiring employees of the PWA or WPA to use physicians designated by those organizations.

President Ringer: Is there a second to that motion?

. . . The motion was duly seconded. . .

President Ringer: You have head the motion which has been seconded. I shall not repeat it because it is too long. Is there any discussion of that motion?

Dr. M. C. Palmer (Polk County): Mr. President, in Polk County we have a situation where there are three physicians. I purposely inquired as to who appointed the WPA physician and was informed that no physician had been appointed, that they were instructed to employ anyone they desired.

That is the situation in our county.

It is quite a question in my mind as to whether Dr. McIntosh is correct in his assumption that they do designate the physicians.

Dr. McIntosh: They do in our county.

Dr. Palmer: They don't in mine.

President Ringer: Is there any further discussion? If not, are you ready for the question on Dr. McIntosh's motion?

. . . The motion was put to a vote and carried. . .

President Ringer: I believe it is customary that a committee be appointed on the President's Message to the House of Delegates, to con-

sider the recommendations contained therein. I will ask Dr. C. F. Strosnider, my successor, to appoint that committee. He need not do it at the moment, but I would like to have him do that this evening so that the committee can make its report at the last meeting of the House of Delegates.

Next is the report of the Committee on Cancer, Dr. C. C. Carpenter, Chairman.

REPORT OF THE COMMITTEE ON CANCER

Mr. President, Members of the House of Delegates:

In the December 1935 issue of *Southern Medicine and Surgery* your Chairman called attention to the proposed program of this Committee for this year. In this program we attempted to induce as many members of the profession as would do so to give special programs on cancer. We have found a certain degree of coöperation. A good many of the County and District Medical Societies have held meetings and given the major portion of the program to the discussion of cancer. The members of your Committee have attended a good many meetings. We have had a number of requests from various lay organizations for a discussion of cancer and have attempted in all instances to do so. Each member of the Committee has in his possession a set of lantern slides and films on carcinoma of the breast. More particularly for lay groups we have two films. One is entitled, "Fight Cancer with Knowledge"; and another, "Cancer: Its Life History and Practical Measures for its Control." Any or all of this material is available to any physician who desires to use it.

As suggested to you last year, we feel that it is highly desirable that the medical profession continue to take the lead in cancer control. We have been impressed by the fact that the laity look to us for guidance in these matters and they will probably follow our leadership if we continue to give them coöperation.

Respectfully submitted,
C. C. Carpenter, *Chairman,*
H. B. Ivey,
W. D. James.

(Applause)

President Ringer: You have heard Dr. Carpenter's report. What will you do with it?

. . . It was moved and seconded that the report be accepted and approved. . .

President Ringer: Is there any discussion of the motion to approve?

. . . The motion was put to a vote and carried. . .

President Ringer: Next is the report of the Committee on Public Relations, by Dr. Wingate M. Johnson, of Winston-Salem, Chairman.

REPORT OF PUBLIC RELATIONS COMMITTEE—1936

Mr. President, and Members of the House of Delegates:

The chief activity of our committee this year has been productive, we hope, of some possible benefit to the Society. Inasmuch as this is an election year, it occurred to us that it might be a good idea to write each one of the candidates for the governorship, regardless of party affiliation, asking that he let us know his stand on questions affecting the medical profession of the state. Each member of the committee and a number of representative doctors throughout the state were asked for suggestions. The following letter, representing the composite opinion of the group, was sent to every candidate, and all of them replied. Let me read the letter first, then the replies. Please note that the replies are read in alphabetical order.

Before reading this correspondence, we wish to thank the society for its coöperation during the past year, and to urge that all county societies that have not done so appoint local public relations committees to act as official mouthpieces for the society as a whole.

L. B. McBrayer,
D. W. West,
W. M. Johnson, *Chairman.*

Dear .....:

As chairman of the Public Relations Committee of the North Carolina Medical Society, I am addressing this letter to all the candidates for the governorship of the state, regardless of party affiliation. Its purpose is to find out your attitude on certain questions of vital importance to the medical profession. I expect to present your views, as well as those of all other candidates, to our Society at its next annual meeting in May, in order to help the two thousand doctors of North Carolina decide how to use their influence and to vote in the coming primary and election.

One question which is being agitated throughout the country, chiefly by professional propagandists, is that of compulsory health insurance, or state medicine. The medical profession of our state has taken its stand solidly behind the delegates of the American Medical Association, in being opposed to any form of compulsory health insurance, which would add enormously to the taxpayer's burden and would inevitably lower the standard of medical practice. Will you please say whether you would favor any form of compulsory health insurance?

Again, would you favor a continuation of the present arrangement whereby a committee from the State Medical Society acts in an advisory capacity to the Workmen's Compensation Commission? I may say that this arrangement and the present personnel of the Commission apparently are proving satisfactory to most of the doctors in the state, and I believe satisfactory to the Industrial Commission.

Finally, and most important, would you be willing to consult with the North Carolina State Medical Society, through its official representatives,

upon any matter affecting the medical profession of the state that might come up in the legislature or before the governor for consideration?

These questions are not asked to embarrass you, but because we feel that we are entitled to know how our next governor will be disposed toward the guardians of the state's health. We are sure that you have the courage to express your convictions, and a frank reply will make for a better understanding between yourself and the doctors of North Carolina.

With best wishes,

Sincerely,

April 18, 1936.

Dr. Wingate M. Johnson,
703 O'Hanlon Bldg.,
Winston-Salem, N. C.

Dear Mr. Johnson:

Replying to your letter of sometime ago, asking my position regarding compulsory health insurance, wish to advise that I am definitely opposed to this measure for the reason that same would entail additional taxes and I feel that there are other movements along the line of social security which are much more desirable and should be pressed at this time. It may be that compulsory health insurance will be desirable at some future date but certainly not any time soon.

I strongly favor the plan of having a committee from State Medical Society act as an Advisory Board to the Workmen's Compensation Commission. So far as I am able to learn this plan is satisfactory and does a great deal to maintain full understanding between the doctors and the Industrial Commission.

I feel that the State Medical Society is the official unit or organization of the doctors of our State and would be most happy to confer with the Legislative Committee of the State Medical Society upon all questions which might arise either before the legislature or the chief executive. I feel that this course is not only fair to the doctors but is a common sense method of trying to get views on different sides of public matters and certainly representative doctors are in better position to give reliable information on matters affecting health of our citizens.

I have tried to answer your questions very fully and certainly frankly, however, if there is any phase of these matters I have not made clear I will only be glad to do so.

With best wishes, I am,

Sincerely yours,

AHG/im—Copy

SANDY GRAHAM.

April 23, 1936.

Wingate M. Johnson, M.D., Chairman,
Public Relations Committee of the North Carolina Medical Society,
Winston-Salem, North Carolina.

Dear Doctor and Chairman:

You ask of me as a candidate for governorship the following questions:

"Do you favor the solid stand of our State medical profession behind the American Medical Association in opposing any compulsory health insurance, adding to taxpayer burdens and lowering standards of medical practice?" I do.

"Do you favor arrangement whereby committee from our Society acts in advisory capacity to Workmen's Compensation Commission?" I do.

"And, most important, would you consult the North Carolina Medical Society upon all official matters affecting our State medical profession?" I will.

In answering these questions, it is deemed proper to say who it is that gives such firm and affirmative approval. The writer is the son of a physician, Dr. Eugene Grissom, who was one of the charter members of your Medical Society; he studied medicine but for one term only at the University of Pennsylvania and studied and practiced pharmacy; later he became the United States Collector of Internal Revenue and never failed to serve your members and never will fail, in either private or public capacity; he holds in reverence your profession, the one upon whose name as such there never has been or will be a stain.

These answers are personal ones and in no way connected with the incident that I have yielded to those who have been generous enough to ask that I allow the people of my State to say whether they again want me to serve them.

Let me thank you for giving me the privilege of saying to you and to your compeers what has been on my heart from infancy to my present ripe age and let me remain

Obediently yours,

Copy GILLIAM GRISSOM.

March 23, 1936.

Dr. Wingate M. Johnson, Chairman,
703 O'Hanlon Building,
Winston-Salem, North Carolina.

My dear Dr. Johnson:

I have your letter of March 18, 1936, and thank you for writing me.

I have given full consideration to the questions raised in your letter and I can answer them definitely as follows:

1. I would not be in favor of any compulsory form of health insurance, as indicated in your question.

2. I am in favor of the continuation of the present arrangement by which a committee from the State Medical Society acts in an advisory capacity to the North Carolina Industrial Commission.

3. It would be my purpose and pleasure to consult with the North Carolina Medical Society, through its official representatives, touching any matter affecting the medical profession in the State.

I can say that I have no sort of hesitation in answering these questions, because they represent my mature judgment and the friendly interest which I have always felt in the activity and achievements of the North Carolina Medical Society and of your honored profession.

With sentiments of esteem and regard, I am,

Yours very truly,

CRH-W—Copy

CLYDE R. HOEY.

April 11, 1936.

Dr. Wingate M. Johnson, Chairman,
703 O'Hanlon Building,
Winston-Salem, N. C.

My dear Dr. Johnson:

Dr. McDonald referred your splendid letter of March 19 to me for my personal attention on account of his absence on speaking engagements throughout the State, and instructed me to write you his views with reference to the questions propounded by you.

Replying to the first question, will say that Dr. McDonald is of the opinion that the medical profession of North Carolina is one of the noblest and highest causes to which any man may aspire, and that the doctors of the State have always been public spirited and given their time, ability and professional experience and knowledge unstintingly to the public and he would not favor any measure which the splendid doctors of our State, speaking through their medical profession, did not honestly believe to be for the best interest of the public, and naturally, would not favor any form of compulsory health insurance.

Replying to the second question, there has been no agitation with reference to Workmen's Compensation Commission, and the Committee of the State Medical Society, and unless the doctors themselves saw fit to make a change he would not be inclined to recommend any change.

Dr. McDonald states that he would be glad to consult and coöperate with the North Carolina Medical Society through its official representative upon any and all matters affecting the medical profession, including any legislation which might come up in the Legislature during his tenure in office.

The Doctor's entire program is one in which he takes a frank stand upon every question that is presented, and you may rest assured that Dr. McDonald would under all circumstances be largely governed by the wishes and desires of the North Carolina Medical Profession with respect

to matters pertaining to public health and public welfare, and the rights of the doctors to have a voice in the management and control of their chosen profession.

The campaign is daily gaining momentum and we urge you to join hands with us and bring about a New Deal in North Carolina and return our State government to the people.

Thanking you for any assistance and coöperation that you may render in the campaign, I am

Yours for a better government in North Carolina,

W. L. LUMPKIN,
Campaign Manager.

WLL/L—Copy

March 25, 1936.

Dr. Wingate M. Johnson,
703 O'Hanlon Building,
Winston-Salem, N. C.

My dear Doctor Johnson:

Replying to your letter of the 18th permit me to say:

I am opposed to compulsory Health Insurance or State Medicine.

I am not sufficiently informed about the present arrangement of the appointment of a Committee from the State Medical Association to advise with the State Workmen's Compensation Commission, to give you an answer which is satisfactory to myself. If I should have the opportunity, I will inform myself and advise you. If I do not have the opportunity to properly inform myself and advise you, I assure you that I will give the matter proper consideration and decide the question with what I think is in accord with public interest, if I should be elected governor, and the matter should come before me.

I state to you unequivocably that I shall be willing, in the event I am elected governor, to confer with the Committee of the State Medical Association about any matter effecting the medical profession.

Yours very truly,

Copy

JNO. A. MCRAE.

. . . Dr. Johnson presented the prepared report of this Committee, at the conclusion of which he made the following extemporaneous remarks:

DR. JOHNSON: While I am on my feet, I would say that as Chairman of the Medical Economics Committee we have no report to make. There was nothing this year to meet for, so you need not call for a report from that Committee.

And one short word of a personal nature: I want to say the job as Chairman of this Committee has not always been a pleasant one. Some things have come up occasionally that I have had to deal with that have been rather distasteful and in one or two instances I may have offended someone's feelings because I tried to do my duty as I saw it. I want to say

now that anything I may have said or done was not done with the intent of injuring anyone's feelings at all. I simply tried as Chairman of the Committee to do my duty with malice toward none and charity for all. (Applause)

President Ringer: What action do you wish to take upon this very interesting report of Dr. Johnson?

Dr. Forest M. Houser (Cherryville): Mr. President, I would like to make a motion that we accept this report, and that this House of Delegates go on record as instructing each delegate to return to their County Medical Society and have the Secretary of that County Medical Society write a similar letter to whoever in that county is running for the Senate or the House of Representatives, and get a report back to the County Society, so that we will all know how to vote in the respective sections of the State. (Applause)

President Ringer: Is that motion seconded?

. . . The motion was duly seconded. . .

President Ringer: Is there any discussion of the motion?

Dr. K. B. Pace (Pitt County): We have already done that in our county. We did that several days ago, and we have the replies from the different candidates which we are going to send to Dr. Lawrence in due time so that he can use them as time goes on.

We told each candidate that there would be certain legislative matters that would come up and we wanted to know whether they would be willing to coöperate with us and support our Legislative Committee in Raleigh, of which Dr. Lawrence is Chairman. We asked them to let us know to what extent they would support in matters pertaining to the medical profession of the State of North Carolina.

As I say, we have these letters on file in the county ready to send to Dr. Lawrence, and I would like, if Dr. Houser has no objection, to offer an amendment to his motion: not to have the Secretary of the County Society write these letters, but to have each County Society appoint a Legislative Committee of three members and have that Legislative Committee write to each candidate in the county and have each one of the three—the committee should consist of at least three members—members sign their names to the letter, requesting each candidate to reply.

President Ringer: Is there a second to Dr. Pace's amendment?

. . . The amendment was regularly seconded. . .

President Ringer: You have heard Dr. Pace's amendment of Dr. Houser's motion. Is there any further discussion?

Dr. C. F. Strosnider (Wayne County): Our County has been working along this line for many years. At the present time we have a Legislative Committee. This Legislative Committee has been authorized by the Wayne County Medical Society to get the views of the candidates and

report back to the County Society and these views in due time will be transmitted to the State Legislative Committee.

This is a matter of great importance to the medical profession of the State of North Carolina. The time to get your work done is now, before they are elected, and not after these men get to Raleigh. Then it will be too late.

I wish to endorse the motion.

Dr. Henderson Irwin (Wayne County): Mr. President, don't you think it would be a good idea, after you get all these reports, to have each County Medical Society have one member who will be held at the disposal of Dr. Lawrence when these questions come up, so that that member can go and look after his Senators and his members of the House when something comes up?

President Ringer: Is there any further discussion? If not, we will vote upon the amendment to the motion first, the amendment made by Dr. Pace, to the effect that instead of one man being empowered to work this thing out that a committee of three be appointed by each County Medical Society—is that it?

Dr. Pace: Yes, and call that a Legislative Committee of the County Medical Society, and all three of them sign the letter to each candidate.

President Ringer: You have heard the amendment. All those in favor signify by saying, "Aye," opposed, "No." It is so ordered.

We will now vote upon Dr. Houser's original motion, which you have heard, and which I have not a good enough memory to repeat verbatim. All those in favor of that motion signify by saying, "Aye," opposed, "No." It is so ordered. Both motions are carried.

Next on the order of business is the report of the Board of Medical Examiners. Dr. Lawrence!

Dr. Benjamin J. Lawrence: Mr. President, the hour is getting late, and with your permission, I will defer that to a subsequent meeting.

President Ringer: You are permitted.

Next is the report of the Committee on Post Graduate Assemblies. Dr. Hardin.

Dr. R. H. Hardin: Mr. President, if I may be permitted to do so, I will present that report by mail.

President Ringer: All right.

REPORT OF COMMITTEE ON POST-GRADUATE STUDY

The first meeting of the Post-Graduate Assembly was held at the Pinnacle Inn, Banner Elk, N. C., on August 22 and 23, 1935, the subject for discussion being gynecology and obstetrics. Sixty doctors registered and much interest was manifested. The meeting was opened on Thursday afternoon, the 23rd, at 2 o'clock with Dr. R. H. Hardin of Banner Elk presiding. Dr. Taylor of Morganton presided in the place of Dr. James

W. Vernon at the second session and Dr. C. L. Sherrill presided at the last session on Friday morning, August 23. Splendid papers were read and discussed.

The committee had hoped to hold similar assemblies in the central and eastern parts of the State but due to weather conditions and other meetings during the winter and early spring, it was deemed unwise.

Respectfully submitted,

Dr. R. H. Hardin, *Chairman,*
Dr. James W. Vernon,
Dr. C. L. Sherrill.

POST-GRADUATE ASSEMBLY OF THE NORTH CAROLINA MEDICAL SOCIETY

Banner Elk, North Carolina, August 22 and 23, 1935

COMMITTEE ON POST-GRADUATE STUDY

Dr. R. H. Hardin, Chairman.....Banner Elk, N. C.
Dr. James W. Vernon.....Morganton, N. C.
Dr. C. L. Sherrill.....Statesville, N. C.

Lees-McRae College Auditorium

Thursday Afternoon, August 22, 2:00 P. M.

Presiding, Dr. R. H. Hardin, Chairman Committee on Post-Graduate Study

Invocation.....Rev. J. M. Murray, Pastor Presbyterian Church Banner Elk, N. C.

Address.....Dr. L. B. McBrayer, Secretary and Treasurer, North Carolina Medical Society

Ectopic Gestation.....Dr. T. V. Goode, Statesville, N. C.

Pre-Natal Care.....Dr. Oren Moore, Charlotte, N. C.

Serum Tests for Pregnancy.....Dr. R. A. Ross, Durham, N. C.

The Problem of Pregnancy in the Tuberculosis Patient Dr. C. H. Cocke, Asheville, N. C.

The Elliott Treatment of Pelvic Infections.....Dr. Paul W. Johnson Winston-Salem, N. C.

Dinner

Pinnacle Inn, August 22, 7:00 P. M.

Address.....Dr. Paul H. Ringer, President, North Carolina Medical Society, Asheville, N. C.

British Hospitals' Contributory Funds.....Mr. Graham L. Davis Duke Endowment, Charlotte, N. C.

BOARD OF MEDICAL EXAMINERS

OF THE

STATE OF NORTH CAROLINA

1932-1938

Dr. F. Webb Griffith, President

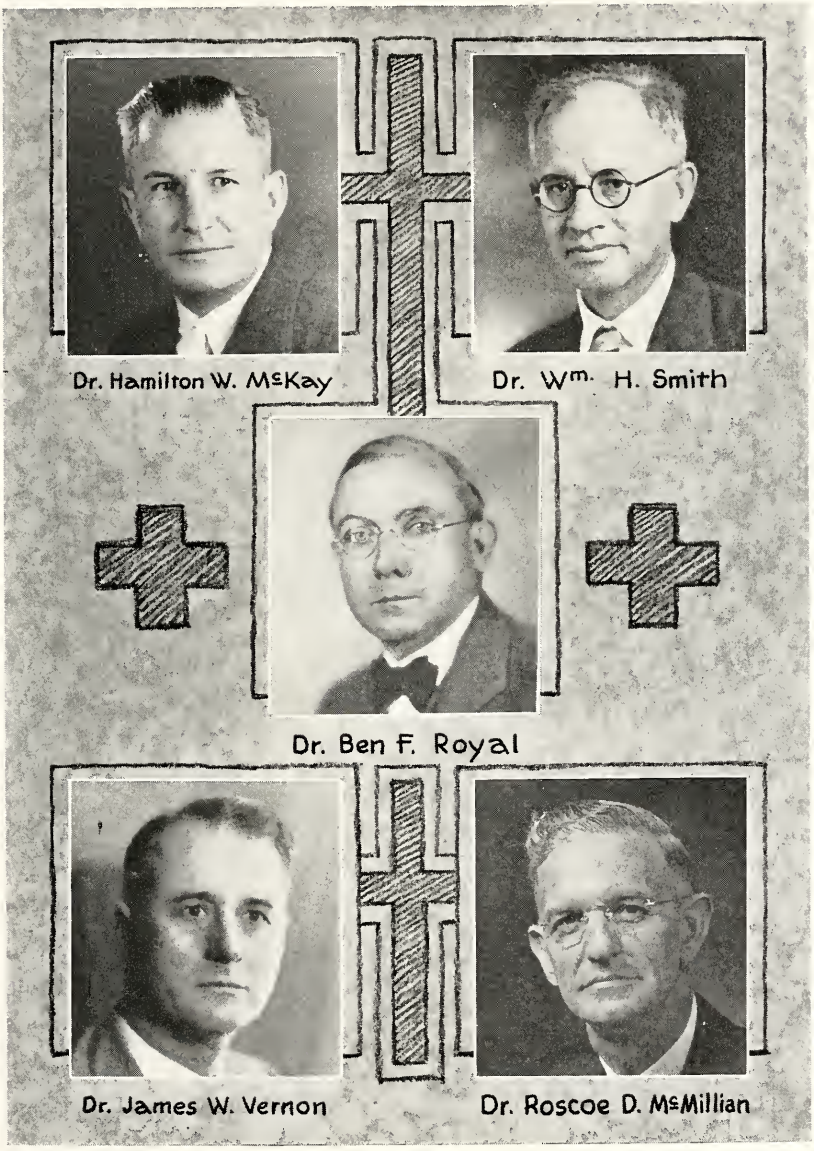
Dr. Ben Lawrence, Secretary & Treasurer

BOARD OF MEDICAL EXAMINERS

OF THE

STATE OF NORTH CAROLINA

1932-1938



Thursday Evening, August 22, 8:30 P. M.

Presiding, Dr. C. L. Sherrill, Statesville, N. C.

Ureteral Transplantations—A New Method.....Dr. A. G. Brenizer
Charlotte, N. C.

Tumors of the Breast—Pathology and Diagnosis .....Dr. H. A. Royster
Raleigh, N. C.

Treatment of Cancer of the Cervix by Radiation.....Dr. J. P. Rousseau
Winston-Salem, N. C.

Abortions—Indications and Contra-Indications.....Dr. B. C. Nalle
Charlotte, N. C.

Pyelocystitis in the Pregnant Woman.....Dr. Hamilton W. McKay
Charlotte, N. C.

Friday Morning, August 23, 9:30 A. M.

Presiding, Dr. James W. Vernon, Morganton, N. C.

Heart Conditions During Pregnancy.....Dr. Clyde Gilmore
Greensboro, N. C.

Tumors of the Breast.....Dr. Deryl Hart, Durham, N. C.

Diseases of the Newborn.....Dr. D. L. Smith, Saluda, N. C.

Fractures in the Newborn and Early Childhood.....Dr. O. L. Miller
Charlotte, N. C.

Tumors of the Uterus and Adnexa Complicating Pregnancy
Dr. J. T. Burrus, Dr. Harry L. Brockmann, High Point, N. C.

The Psychotic Manifestations Associated with Pregnancy, the
Puerperium and the Menopause.....Dr. Roy Hamilton Long
The State Hospital, Morganton, N. C.

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS

Since our last meeting the Board has suffered a severe loss in the death of our beloved member, Dr. K. G. Averitt, who died at his home in Cedar Creek in September, 1935. At the December meeting, held at the Carolina Hotel in Raleigh, the Board elected Dr. Roscoe D. McMillan to succeed Dr. Averitt.

The Board has not revoked the license of any physician in the State during the past year and we have granted licenses to forty-five men by reciprocity, and sixty-six men were licensed by examination.

The Board has had fewer complaints than usual about men practicing without licenses. Each and every one of these complaints have been investigated and we find that the most of them will not warrant or justify prosecution under the present laws. However, the Board is now attempting to convict or have convicted one party who, in our judgment, is apparently flagrantly violating the law.

The next regular meeting of the Board of Examiners will be held at the Sir Walter Hotel on the morning of June 15th. Candidates for reciprocity will be interviewed during the morning. Registration for examination will take place in the afternoon, and examinations will follow each morning and afternoon thereafter until completed.

The Board is working in perfect harmony and accord and there is the finest possible friendship and coöperation among each of its members.

Our President, Dr. F. Webb Griffith, is abroad at the present time and Dr. Ben F. Royal of Morehead City is Acting President in his absence. Dr. Griffith expects to return to the states in time for the June meeting.

BENJ. J. LAWRENCE, M.D., F.A.C.S.,
Secretary, N. C. State Board of Medical Examiners.

SIXTY-THREE TO BE ADDED TO STATE'S ROSTER OF DOCTORS AS RESULT OF EXAMINATIONS

Raleigh, July 15.—(AP)—The State Board of Medical Examiners announced today 63 persons passed the recent tests in medicine and surgery and would be licensed to practice their profession in the State.

The Board also announced award of reciprocity licenses to physicians holding licenses in other states and the licensing of Dr. Carlton Noble Adams, of Wilson's Mills, on the basis of his Maryland credentials.

Dr. Allen Byrd, of Erwin, now an interne in Rex hospital here, made the highest average, 95 1-7, on the examination. Next was Dr. Early Wimberly Brain, of Durham, with 94 6-7; and third was Dr. Robert Edgar McCall, Jr., of Marion, with 94 1-7.

THOSE GRANTED LICENSE

The list of persons granted licenses follows:

Edwin Burtis Aycock, Fremont; Archie Lipe Barringer, Mount Pleasant; Hugh George Bell, Durham; Thomas Hileman Brantley, Kannapolis; Early Winfrey Brian, Durham; Victor Brown, Greensboro; William Lumsden Bundy, Fayetteville; Richard Wilmot Bunn, Henderson; John Cole Burwell, Jr., Warrenton; James Harry Bunn, Jr., Henderson; Allen L. Byrd, Raleigh; Clarence Paul Cameron, Ocean City, N. J.; Chalmers Rankin Carr, Mooresville; Andrew Long Chesson, Elizabeth City; Amos Gilmore Crumpler, Roseboro; Harold Harcourt Culmer, Raleigh; Gilbert Orville Dean, Iowa City, Iowa; Ralph Gibson Fleming, Northside; Ernest Whitmal Furgurson, Louisburg; Roy Wade Franklin, Raleigh; Jacob Luther Fritz, Hickory; John Osborne Fulenwider, Jr., Monroe; H. Fleming Fuller, Franklinton; Bruce Davis Gilbert, Fairmont; June Uriah Gunter, Sanford; Len D. Hagaman, Winston-Salem; Raymond Harris Harmon, Boone; Russell Daniel Holt, Asheville; Columbus H. Barnwell, Edneyville and Chicago, Ill.; Herbert Andrew Hudgins, Winston-Salem;

Dean Hudley, Jr., Raleigh; William Oliver Johnston, Charlotte; Roland Lincoln Kesley, Sanatorium; Murray Carlyle Kinlaw, Elizabethtown; Ben Franklin Martin, Fayetteville; Robert Edgar McCall, Jr., Marion; May Margaret McLeod, Sanford; Robert Hartwell Mitchell, Aulander; Reginald Oscar Morris, Washington, D. C.; Davis Lee Moore, Stokes; Robert Page Morehead, Weldon; Robert Holle Moorefield, Salisbury; Leland Ray O'Brian, Jr., Asheboro; Philip Grover Padgett, Forest City; William Benton Patterson, Chapel Hill; Charles William Reavis, Raleigh; Nathan Rifkinson, Brooklyn, N. Y.; Robert Lee Robinson, Mars Hills; James Dan Royster, Bullock; Jacob Harrison Shuford, Hickory; William Ballance Smith, Fremont; William Carey Smith, Goldsboro; Walter Monroe Summerville, Charlotte; Rufus Henry Temple, Kinston; Baxter Suttles Troutman, Addor; Martha Cook Wager, Monroe; Elmer Pixley Walker, Roxboro; Samuel Edward Warshaner, Wilmington; Andrew Jackson Weaver, Mebane; Rayford Lee Weinstein, Fairmont; Thomas Clarkson Worth, Raleigh; Creighton Wrenn, Garner; Abner Augustus Wright, Washington; Wiley Royster Young, Angier.

The following were granted licenses in this State by reciprocity: Carl C. Sox, Kenly; Robert Lindsey McMillan, Durham; L. L. Parks, Tarboro; John Henry Dougherty, Asheville; Margaret E. White, Rocky Mount; Lloyd Uber Lumpkin, Baltimore; Alberti Fraser Lapsley, Richmond, Va.; Milton Douglas Quigless, Fort Gibson, Miss.; Edward Goire Cannon, Pickens, S. C.; Paul Hobb, Wincomico, Va.; Channing Glenn, Petersburg, Va.; Samuel Leon Elfman, Richmond, Va., and Fayetteville; Duncan I. C. King, Washington and Charleston, S. C.; and John Francis Register, Greeleyville, S. C.

REPORT OF DELEGATES TO A. M. A.

Mr. President and Members of the House of Delegates:

Your representatives attended all sessions of the House of Delegates of the American Medical Association held in Atlantic City during the week of June 10 to 15, 1935.

Despite the rainy weather at the start, 8,469 physicians were registered. This is stated to have been the largest number ever to have assembled for a convention at one time. A most friendly spirit existed between the Canadians and Americans present. It was the general feeling that having this a joint meeting between the two associations had served a useful purpose.

The business of the House was very largely concerned with questions of policy in the changing economic and social conditions. State medicine, hospital insurance schemes, insurance group practice, medical insurance scheme, etc., were carefully and seriously studied. It was the constant desire of the House to keep the medical profession organized, free, independent, and unshackled by political or commercial dominance.

There was one matter of regret to your delegates. The Council on Medical Education and Hospitals was expected to report its recommendation about two-year schools during the session of the House. This report was deferred for several months, thus precluding an appropriate opportunity for your delegates to express the conviction of this Society that the maintenance of the two-year schools at the University of North Carolina and Wake Forest College is desirable for this State and desired by the profession in the State.

Reports of the Minutes of the House of Delegates and of the Sections are to be found in the *Journal* of American Medical Association of the dates June 22, 1935, June 29, 1935, and July 6, 1935.

Respectfully submitted,

M. L. Stevens,
Geo. L. Carrington.

. . . On motion, approved. . .

We now come to Reports of Councillors.

First District—Dr. C. B. Williams. (Not present.) Has anyone from the First District a report to make? (No response)

Second District—Dr. Pace.

Dr. K. B. Pace: Mr. President and Gentlemen of the House of Delegates: This is the report of the Second District Councillor: We have visited most of the doctors in all ten counties in the Second District during the past year. We have urged more frequent County Medical Society meetings, at least one a month in every county, even if there are only two or three that will attend each time, in the hope of building them up as time goes by.

We had a very successful Second District Post-Graduate course in obstetrics beginning October 21, 1935, and lasting five days. It was very well attended.

We had one district meeting on February 24, 1936, at New Bern. That was attended by our President and Secretary.

We will have two District meetings each year hereafter. This year, in July, we are to have one at Morehead City, and next February we will have a second meeting at Washington, North Carolina. I want to invite you all right now to come to those meetings, because the men in these two towns have promised to take care of us in good shape.

President Ringer: I am not going to ask you to endorse these Councillors' reports. They are endorsed by their own weight.

Third District—Dr. J. F. Robertson. (Not present.)

Fourth District—Dr. E. S. Boice. Is Dr. Boice here? He was. He has evidently gone.

Fifth District—Dr. Roscoe D. McMillan. Is Dr. McMillan here? I haven't seen him.

Sixth District—Dr. W. M. Coppridge. (Not present.)

Seventh District—Dr. Forrest M. Houser.

. . . Dr. Houser presented his prepared report for the Seventh District. . .

REPORT OF COUNCILLOR OF THE SEVENTH DISTRICT

Mr. President and Members of the House of Delegates:

Representing the Seventh District of the State Medical Society as Councillor, I have the following report to make:

During the past year I have attended the two Executive Committee meetings held in Raleigh. I have visited practically all of the County Medical Societies in my District at least one time.

We had our Annual District Meeting at Wadesboro in the fall. The afternoon session was composed of scientific papers handled entirely by members of the district. All papers presented were a credit to our District and would be a credit to any medical society meeting held anywhere in the United States, regardless of size. The evening meeting was devoted entirely to a banquet and social. We had as our guest of honor our beloved and very efficient Secretary-Treasurer of the State Society, Dr. L. B. McBrayer, who made a very excellent address. Both sessions were well attended, having a record crowd for a district meeting on the edge of the District.

Your Councillor was extremely pleased in being able to assist in bringing Dr. J. R. McCord to Gastonia for five afternoons of excellent post-graduate work in obstetrics for the members of the Seventh District. This office sent in a digest to every newspaper in the District and to several of the adjoining counties. We also mailed cards to each physician in the territory. The course of lectures offered by Dr. McCord were all well attended despite the inclement weather. It was my privilege and pleasure to be able to attend each of these lectures and I feel that every physician who attended was more than repaid for his time and expense in attending. I also feel that Dr. McCord's post-graduate study will be felt in this District for a long time to come and will be well demonstrated by a lowering of our infant and maternity death rate.

Five weeks prior to our Annual Meeting in Asheville I wrote a letter to the secretary of each of the County Medical Societies in my District informing them of the place and date of the meeting and also of the hotel selected as headquarters. I urged the secretary to inform all members, at their next meeting, of the annual State Society meeting and urged them to make reservations early and attend in a goodly number.

As nearly as I can determine from my visits over the District all of our County Medical Societies except two small ones are holding regular meetings which are well attended and at which real scientific papers are presented, and at which the greatest of harmony prevails.

Respectfully submitted,

F. M. Houser.

President Ringer: Eighth District—Dr. R. C. Mitchell.

Dr. R. C. Mitchell: Mr. President and Members of the House of Delegates: This report is shaved to the bare facts, in order to save your time and mine.

. . . Dr. Mitchell presented his report as Councillor of the Eighth District. . .

Mr. President and Members of the House of Delegates:

I herewith submit my report as Councillor of the Eighth District for the year past. There have been two district meetings this year, one at Greensboro, September 24, 1935, and one at Mount Airy, Wednesday, April 15, 1936. Both meetings were well attended and had good programs. Copies of these programs including the guests speakers are herewith attached.

No matter has arisen in any of the county societies requiring the attention of the Councillor for its adjustment.

Respectfully submitted,

Roy C. Mitchell, M.D.,
Councillor Eighth District.

President Ringer: Ninth District—Dr. J. R. Terry.

Dr. J. R. Terry: I will ask permission to mail in my report.

President Ringer: Tenth District—Dr. G. W. Murphy.

Dr. G. W. Murphy: Mr. President, since this report contains nothing which requires action by the House of Delegates, I ask your permission to present it by title only and will turn it over to the Secretary.

President Ringer: Permission is granted.

REPORT OF COUNCILLOR OF TENTH DISTRICT

The first meeting of the Tenth District Medical Society of the year was held at Marshall on May 27th. Sixty-one members were present. The guest speakers were Dr. Hal M. Davison of Atlanta and Dr. Oren Moore of Charlotte. The second meeting of the Society was held in Tryon on October 16th. Sixty-two members were present. Dr. Chamberlain of Charleston was the guest speaker but was prevented from attending by illness. Dr. A. J. Jervey of Tryon was elected president. Dr. Harold S. Clark of Asheville was re-elected secretary.

The Tenth District Medical Society has been exceptionally honored during the past year in that Dr. Paul H. Ringer, president of the Medical Society of the State of North Carolina is one of its members. The Councillor has been very fortunate in his association with the chief executive of the state organization and the district has profited by the continued advice of Dr. Ringer.

Some matters involving medical ethics have arisen during the year but have been satisfactorily settled in a constitutional manner without being

referred to the Executive Committee or the House of Delegates. The morale of the profession in our district shows a definite improvement. Our economic status is on a firmer foundation and we have high hope that the next few years will bring much prosperity to Western North Carolina physicians. We have had a number of young, well trained physicians who have moved into the district during the past twelve months and there is every reason to believe that these additions will reflect credit on our profession.

G. W. Murphy, M.D.,
Councillor Tenth District.

Dr. Klutz: Mr. President, may I ask one question?

Last year, I believe, the second meeting of the House of Delegates was moved up to the second day of the convention at two o'clock, or the third day. Previously, a year or two ago—I was absent from the meeting last year—the Constitution provided that any motion made at the first meeting of the House of Delegates had to be tabled until the second meeting, which was held forty-eight hours afterwards.

Has there been any change in the Constitution to provide for the moving up of the meeting of the House of Delegates, so that anything brought up tonight might be passed on and be made legal at two o'clock tomorrow?

President Ringer: I believe so. It has to lay over twenty-four hours. But the next meeting of the House of Delegates is not until two o'clock Wednesday afternoon. So that rule is complied with.

Dr. R. H. Crawford (Rutherford County): Mr. President, I would like to ask for permission of the floor for Dr. Bostic, who is not a member of this House of Delegates, but who has a matter of great importance that he would like to present.

President Ringer: Dr. W. C. Bostic, although not a member of the House of Delegates, has a resolution he wants to present and Dr. Crawford, a member of the House of Delegates, presents him for that matter.

Dr. Bostic!

A RESOLUTION OFFERED IN THE HOUSE OF DELEGATES OF THE NORTH CAROLINA MEDICAL SOCIETY AT ASHEVILLE, N. C., MAY 4, 1936, AND REFERRED TO THE COUNCIL FOR STUDY BY DR. W. C. BOSTIC, FOREST CITY, NORTH CAROLINA

Mr. President:

Thank you very much for the privilege of offering a resolution which I think is of vital interest, not only to the doctors and hospitals, but to every man, woman and child that walks or rides the highways and streets of North Carolina.

"Resolved, that the House of Delegates of the North Carolina Medical Society favor the present scale of fees for automobile license tags for North Carolina.

"That fifty per cent of the cost of the licenses be used to purchase liability insurance for each and every automobile in the State. The amount of insurance to be applied first to those injured, in supplying medical attention and hospital care and the repair of damages to automobile and other property."

That this body in session furnish their respective Representatives and Senators copies of this resolution urging them to support this measure and to see that such a bill is passed at the next Legislature in 1937.

That each and every member write or wire their endorsement of this measure and in every way urge the passage of such a bill in the next Legislature.

We believe that if fifty per cent of the present license fee be used to purchase insurance covering liabilities incurred by each and every automobile licensed by the State, that the insurance will be ample to cover at least seventy-five per cent of all the accidents that happen and perhaps more.

Each applicant for license to also have the privilege of purchasing additional amounts of insurance when desired at the same rate furnished by the State by paying an additional amount.

The State may purchase this insurance to be furnished the owners of automobiles from one or more reliable insurance companies at a very low rate, but if not able to purchase it at a very low rate then the State should create an insurance department to handle this insurance and also other insurance needed to cover other State controlled institutions, highways, employees, hospitals, schools and school buses, if desired. The said insurance department created and controlled by the State could use the funds collected to invest in North Carolina bonds and in this way create in part its own bondholders and market for same, keeping all the funds at home and at work.

To operate an automobile on the streets and highways without being financially and physically able to be responsible for at least a part of the damage that might be incurred by an owner of a car is a growing menace to society.

The owner and driver of a second-hand T-model Ford worth $50.00 with only two drinks, may rip off the side of your Buick or Packard, send you to the hospital and maybe cripple you for life or send you to the undertakers without any responsibility except perhaps a small fine or road sentence to satisfy the Court.

With this amount of group insurance at least $500 liability could be placed on every automobile in the State which will in a measure cover a great majority of all the accidents and damages to automobiles and

personal injuries (unless very serious). More than 400,000 automobiles with an average of $5 premium for each automobile would be two million group premiums annually, which would make a very nice business for a State-owned and State-operated insurance department, giving insurance at a very low rate to all its institutions. All automobile owners, doctors, hospitals, nurses, garage owners, auto mechanics, supply houses and thousands of widows and orphans, and last, but sure, the undertakers should sponsor and favor such a measure, and if not—why not?

If any one in North Carolina be able to own and operate a car, if they buy a license tag they will own some liability insurance under this plan.

President Ringer: Gentlemen, you have heard the resolution.

If I may be permitted, I should like to say although this is an important matter, this is not the sort of document that this assembly could adopt without giving it full and mature deliberation. Nor do I think that full and mature deliberation is possible after having heard it just once under the conditions in which it has been presented. I know that to me it is still rather kaleidoscopic and I would have to get various details of it more clearly in my mind before I could give my judgment about the resolution.

Will someone make suggestions as to what we shall do with this resolution? I presume it has been moved that this resolution be adopted by this House of Delegates. Dr. Bostic, I presume that was inferred in your remarks in presenting this resolution?

Dr. Bostic: Yes.

Dr. J. R. Terry: I think it would be a good idea for that resolution to go before the Executive Committee, to be discussed and thought out by them. I think it is a very sensible thing.

President Ringer: Do you make such a motion?

Dr. Terry: I offered that as a suggestion, but I will put it in the form of a motion if you wish.

President Ringer: Dr. Terry makes a motion that this resolution go before the Executive Committee of the Medical Society of the State of North Carolina for mature discussion and consideration.

Is there a second to that motion?

. . . The motion was duly seconded. . .

President Ringer: Is there any discussion of the motion?

Dr. W. B. McCutcheon (Durham): Mr. President, we have a Legislative Committee. Why couldn't that be referred to them for their study and consideration?

President Ringer: It could be. Do you offer that as a substitute motion?

Dr. McCutcheon: I should like to substitute that, if it is acceptable.

President Ringer: Is there a second to the substitute motion?

. . . The substitute motion was regularly seconded. . .

President Ringer: It has been moved and seconded as a substitute motion for Dr. Terry's original motion that this matter be referred to the Legislative Committee of the Medical Society, instead of to the Executive Committee. Is there any discussion of the substitute motion, or the original motion?

Dr. J. F. Abel (Waynesville): I think, sir, that is a very far-reaching thing and as you suggest, I do not think it should be adopted or handled lightly. I do think that the proper channel, in order to keep it in a wider sense before the body—before the Medical Society of the State of North Carolina—would be to let it go through the Executive Committee, and if approved, from the Executive Committee to the Legislative Committee, with its approval, disapproval, or what-not. I believe, sir, it would be better to let it go through the Executive Committee, and keep it before the entire body, instead of confining it to a small group.

President Ringer: Is there any further discussion?

Dr. J. S. Brewer (Roseboro): I was going to suggest inasmuch as there will not be another meeting of the North Carolina Medical Society before the next Legislature meets that after the Executive Committee has passed on this matter that their action be considered as final and that they may recommend that the Legislative Committee take it up with the next session of the Legislature.

President Ringer: That seems to the Chair to be the most satisfactory solution of the problem.

Dr. Carrington: Mr. President, perhaps I misunderstood the motions. My understanding was that this motion was to refer this resolution either to the Councillors or to the Legislative Committee merely to report back to this body at its meeting on Wednesday. Was that not the intent of the motion?

President Ringer: No, that was not the intention of the motion. Was that your thought, Dr. Terry?

Dr. J. R. Terry: No.

President Ringer: That could not be done in the time allotted, you see. That would only give them tomorrow morning and Wednesday morning to work on the thing. That was not my understanding, and Dr. Terry says that was not his idea.

Dr. Terry: No, my thought was that it be discussed at some later meeting of the Executive Committee.

President Ringer: It was not to be referred back to this body, as I understood it.

Dr. Carrington: If it is not to be referred back to this body I would withdraw my second to the amendment. I think it should go to the Executive Committee.

Dr. Brewer: To my mind, this is a matter of the utmost importance and one that should not be considered too hastily. I think it requires deliberate consideration and as I said just a moment ago we won't meet again until after the next session of the Legislature.

I don't want to get too many motions before the house, but if I am not out of order I would just like to submit my idea of a motion to be acted upon at this time. That would be that this resolution be referred to the Executive Committee and if they approve it that their action be accepted as final by this Society and that they pass it on to the Legislative Committee, urging its support before the Legislature.

President Ringer: That was my idea of Dr. Terry's motion when he made it. That was the impression I got.

The second to the substitute motion has been withdrawn. Does anyone else second the substitute motion, the motion to refer it to the Legislative Committee?

. . . The substitute motion by Dr. Brewer was regularly seconded. . .

President Ringer: Is there any further discussion about this matter?

Dr. Newburn: Mr. President, it seems to me this whole question brings us into the realm of socialized medicine which we were just talking about a few minutes ago. This will get us into socialized insurance to take care of a certain class of medical practice.

President Ringer: Is there any further discussion?

Dr. C. A. Peterson (Spruce Pine, Mitchell County): Mr. President, I have had some experience with the Legislature and at one time I prepared a bill which practically covered the whole of Dr. Bostic's resolution, because I believe in it. I believe it is right.

I consulted a number of the leaders in the Legislature about introducing that bill, to see if they thought I could get it passed, and they absolutely said I could not.

I believe that if we keep on we will get it sooner or later. I think if we will get a number of doctors into that Legislature, we will get some legislation by that we haven't yet accomplished. I know that we can elect them to the Legislature, but few in this House know how much we need them there.

I recall at the last session of the Legislature one bill that came before the House, and had it not been for the untiring work of Dr. Ben Lawrence and the competent Chairman, and Dr. Carr, of the Health Committee, that bill would have passed the House, and that bill would have given the osteopath the right to write prescriptions and prescribe medicine. You can give Dr. Lawrence and Dr. Carr the credit for preventing the osteopaths from getting the right to write prescriptions in the city of Asheville today.

I am not going to make a long talk, but I am going to tell a little joke I heard the other day that is told about Mark Twain. He went to hear a very eminent divine speak. The divine took as his text, "The Heathens."

Mark Twain is reported to have said that after he had preached five minutes he decided he would give that fellow fifty dollars. After he preached ten minutes, he cut it down to twenty-five dollars. He said he preached thirty minutes, and he decided he would give him five dollars. He preached an hour, and when the plate came around, he stole two and a half dollars out of it. (Laughter)

I have a little verse I would like to read if you don't mind, Mr. President. It was handed to me when I was in the Legislature, and I have preserved it. I think it is very good. Here it is:

"I've got a letter, Parson, from my son away out west,
An' my 'ld heart is heavy as an anvil in my breast.
His letters come so seldom that I somehow sort o' knowed
That Billy was a trampin' on a mighty rocky road,
But never once imagined he would bow my head in shame,
An' in the dust 'd waller his ol' daddy's honored name.
He writes from out in Hilltown, an' the story's mighty short;
I just can't tell his mother; it'll break her poor ol' heart;
An' so I reckon, Parson, you might break the news to her—
Bill's in the Legislature, but he doesn't say what fur!"

(Laughter and applause)

Mr. President and Members of the House of Delegates, if we will get behind some doctors we can get them in the Legislature. Take the County of Buncombe. If they will get behind some docotr in Asheville, they can elect him to the Legislature. The doctors can do it. Mecklenburg can elect a doctor to the Legislature. Forsyth can. Guilford can and New Hanover. All of these larger counties that are crowded with doctors can spare one. (Laughter) And we need legislation. And we are somewhat responsible, Mr. President, for not getting the legislation we need because the profession is not getting doctors to go out and represent us in the General Assembly.

Thank you. (Applause)

President Ringer: Is there any further discussion? If not, we will vote on the substitute motion, first, the motion to refer this resolution of Dr. Bostic's to the Legislative Committee. The original motion was to refer it to the Council. The substitute motion is to refer it to the Legislative Committee and we will vote on that first. All those in favor say, "Aye," opposed, "No." It is lost.

We now come to the original motion, to refer it to the Executive Committee, whose action shall be final.

. . . The motion was put to a vote and carried. . .

President Ringer: The substitute motion is lost, the original motion is carried, and this matter will be referred to the Executive Committee.

To the House of Delegates,
Medical Society of the State of North Carolina:

Your Committee appointed to study the President's Message to the House of Delegates and his Address to the Medical Society of the State of North Carolina begs leave to submit the following report:

First, we desire to thank President Ringer for his able leadership during the year.

Second, for his splendid presentation of the work he has done this past year.

Third, we recommend the adoption of the six policies as outlined in the President's Message.

Fourth, we consider President Ringer's address one of the outstanding addresses that has been presented to the Medical Society of the State of North Carolina and we thank him for giving us something original and worthwhile.

Respectfully submitted,

A. B. Holmes, M.D.,
Ross S. McElwee, M.D.,
J. Buren Sidbury, M.D.

Is there any further business to come before this House of Delegates before we adjourn? If not a motion to adjourn is in order.

. . . A motion was made, seconded, and carried that the meeting adjourn. The meeting thereupon adjourned at eleven o'clock p. m. . . .

MINUTES OF THE HOUSE OF DELEGATES

Wednesday Afternoon, May 6, 1936, 2:00 o'clock

. . . The House of Delegates was called to order on the north roof of the Battery Park Hotel, Asheville, Wednesday afternoon, May 6, 1936, by President Ringer at 2:00 o'clock.

. . . The President called for the report of the Nominating Committee which report was presented as follows:

OFFICERS

President-Elect—Dr. W. M. Johnson ..... Winston-Salem
First Vice-President—Dr. Charles A. Woodward ..... Wilson
Second Vice-President—Dr. John F. Brownsberger ..... Fletcher

COMMITTEES

Medical Society Foundation

Dr. John Q. Myers (5 years) ..... Charlotte

Obituaries

Dr. J. F. Abel, Chairman.....Waynesville
Dr. J. P. Matheson.....Charlotte

Legislation

Dr. Benj. J. Lawrence, Chairman.....Raleigh
Dr. J. F. Highsmith, Sr.....Fayetteville
Dr. W. D. James.....Hamlet

Moore County Medical Society Medal

Dr. W. C. Mudgett, Chairman.....Southern Pines
Dr. Deryl Hart.....Durham
Dr. Wm. deB. MacNider.....Chapel Hill

Hospitals

Dr. J. F. Highsmith.....Fayetteville
Dr. I. M. Proctor.....Raleigh
Dr. James W. Davis.....Statesville

Cancer

Dr. H. B. Ivey, Chairman.....Goldsboro
Dr. C. C. Carpenter.....Wake Forest
Dr. Thos. L. Lee.....Kinston

Public Relations

Dr. D. W. Holt, Chairman.....Greensboro
Dr. L. B. McBrayer.....Southern Pines
Dr. R. B. McKnight.....Charlotte

Advisory to Industrial Commission

Dr. Donnell B. Cobb, Chairman.....Goldsboro
Dr. Battle A. Hocutt.....Clayton
Dr. F. C. Smith.....Charlotte

Finance

Dr. Vance P. Peery, Chairman.....Kinston
Dr. Julian A. Moore.....Asheville
Dr. W. M. Coppridge.....Durham

Printing

Dr. L. B. McBrayer, ex officio, Chairman.....Southern Pines
Dr. J. W. Dickie.....Southern Pines
Dr. E. C. Judd.....Raleigh

Post-Graduate Medical Study

Dr. R. H. Hardin, Chairman.....Banner Elk
Dr. Jas. W. Vernon.....Morganton
Dr. C. L. Sherrill.....Statesville

Member Advisory Committee on Maternity and Infancy for the Children's Bureau

Dr. Paul F. Whitaker.....Kinston

Arrangements

Place of Meeting.....Winston-Salem
Headquarters.....Robert E. Lee Hotel
Time of Meeting.....May 3, 4, 5, 1937

Delegates to American Medical Association

Dr. John Q. Myers, 1937-38.....Charlotte
Dr. M. L. Stevens, alternate.....Asheville

Delegates to Medical Society of Virginia

Dr. W. H. C. White.....Elizabeth City
Dr. T. W. M. Long.....Roanoke Rapids
Dr. J. G. Raby.....Tarboro
Dr. Floyd Wooten.....Kinston

Delegates to South Carolina Medical Association

Dr. J. B. Sidbury.....Wilmington
Dr. Oren Moore.....Charlotte
Dr. I. Thurman Mann.....High Point

State Board of Examiners for Nurses

Dr. H. A. Newell (from Medical Society 1936-1938)..... Henderson

Respectfully submitted,
J. F. Highsmith, *Chairman,*
J. B. Whittington, *Secretary.*

. . . On motion report of Nominating Committee was confirmed.

New Business

. . . The two resolutions that were introduced by Dr. Bell representing the Iredell-Alexander Medical Society as none of the delegates were present, first resolution was as follows:

To the President and House of Delegates, North Carolina Medical Society:

The Iredell-Alexander Medical Society has requested that a resolution

be introduced by a delegate from our Society that the annual meetings of the State Medical Society of North Carolina be held in one of the following cities:

Wilmington, Raleigh, Durham, Greensboro, Winston-Salem, Charlotte, and Asheville.

We do not object to meeting in Pinehurst occasionally. We feel that the other places named are more accessible and would be more suitable, especially on account of the hotel facilities, and because of better accessibility.

This is not intended as a reflection upon Pinehurst or upon the doctors who have entertained us so well down there, but for the reasons stated we believe that the other places would be more suitable.

The most suitable places for a meeting of the State Medical Society are the larger cities where the hotel facilities are ample, and at the same time accessible to the greatest number of members.

Respectfully submitted,

James W. Davis, M.D.,
Delegate.

A. E. Bell, Mooresville,
Substitute Delegate.

. . . On motion the resolution was laid on the table. Second resolution was as follows:

To the President and House of Delegates, North Carolina Medical Society:

As delegate from the Iredell-Alexander County Medical Society I am instructed to request that the annual dues be reduced from $10.00 to $5.00.

The Society is respectfully requested to give this due consideration.

James W. Davis, M.D.,
Delegate.

A. E. Bell, Mooresville,
Substitute Delegate.

. . . Point of order being made by Dr. George Mitchell, the President ruled that the point of order was well taken and the matter was not properly presented before the House of Delegates.

. . . No further business appearing, on motion the House of Delegates adjourned sine die.

PROCEEDINGS

EIGHTY-THIRD ANNUAL SESSION

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Asheville, North Carolina

May 5-6, 1936

FIRST GENERAL SESSION

TUESDAY MORNING

May 5, 1936

The First General Session of the Medical Society of the State of North Carolina convened at ten-five o'clock, in the Ball Room, Battery Park Hotel, Asheville, North Carolina, Dr. J. LaBruce Ward presiding.

Dr. Ward: I now declare the Eighty-Third meeting of the Medical Society of the State of North Carolina in session.

We have asked Reverend O. G. J. Chandler, Minister at Large, to pronounce the invocation.

Dr. Ward: Members of the Medical Society of the State of North Carolina, Ladies of the Auxiliary, and Visiting Friends: You will note that there is no place on the program for an address of welcome. This omission is not the work of the local physicians, but it is due almost entirely to my longtime friend and brother sinner, Doctor McBrayer. (Laughter) He and Paul Ringer both made it very plain that we were not to have an address of welcome, and therefore we won't have one.

However, I am between the two horns of a dilemma, having them on one side, and the local profession on the other. I feel I would be very derelict in my duty if I were not to say a few words, at least, to let you know that you are welcome.

The members of the Buncombe County Medical Society and the other physicians in Western North Carolina deem it a privilege and an honor to have you with them. This is the first time in thirteen years that you have honored Asheville with your presence, and we want to let you know that you are welcome to the land of the sky, and to these grand old hills, rockribbed and bathed in the sun. We hope that your stay will be pleasant and we wish that you would call on us for anything that you want, either solid or liquid. (Laughter)

In that connection, I have a letter which I was requested to read, which comes from W. J. Everett, Chief of Police: "The Asheville Police Department wishes to welcome to our city the Medical Association of the

State of North Carolina, together with the Women's Auxiliary. The members of this Department are anxious to make your motoring in Asheville a pleasure, and as free from annoyances as possible. To that end, we will strive to render courteous, efficient service, and to be helpful in every way to make the handling of an automobile a pleasure and not a task.

I am furnishing you herewith courtesy cards which when attached to the automobiles will allow special parking privileges."

While the Chief did not put down in black and white what he really meant, he said that I was to tell you that if you happened to get a little invitation from one of the patrolmen to visit the Police Department, just to forget about it. (Laughter)

I have a few announcements to make.

. . . Announcements. . .

Dr. Ward: I have already taken up too much time. It gives me great pleasure to relinquish the Chair to my good friend, Doctor Paul Ringer, your President. (Applause)

. . . Dr. Paul Ringer then presented his presidential address. . . (Applause)

WHAT CONSTITUTES AN INTERESTING CASE?

"The Proper Study of Mankind is Man"—Pope.

By Paul H. Ringer, A.B., M.D., F.A.C.P., Asheville, N. C.

Members of the Medical Society of the State of North Carolina, and Guests:

It is with a deep feeling of pleasure that I preside at this meeting today and stand before you clothed with the office of chief executive of the Medical Society of the State of North Carolina. That it is a source of pride to me to have been elected to this office, is but natural. The deepest feeling of gratification that I have experienced, however, is due to the fact that my colleagues, the men whom I have known and with whom I have worked for thirty years, have considered me worthy of selection for this position. The possession of the confidence and respect of fellow-physicians is the greatest prize that can be won, and I deem myself undeservedly fortunate in having received this evidence of the well-wishings and friendship of my associates in the practice of medicine throughout the boundaries of our commonwealth.

For the past five or six years presidents of medical societies the country over have felt that there was but one subject on which they should address their fellow-members on those occasions when it behooved them to do so; namely, Medical Economics. So much has been written on the various phases of this general topic that many are getting very tired of it—myself among others. My message to the House of Delegates, delivered yesterday evening, had necessarily to concern itself with the business of the Medical

Society of the State of North Carolina, in which naturally medical economics played a major part. In my address today, however, I was very anxious to get away from the business end of medicine and to consider a more scientific phase. I did not wish to choose a subject too technical or one too specialized. I wished to select a topic that would appeal to all physicians, irrespective of any particular branch of practice.

Doctors never gather together that one of them does not say: "I had an interesting case the other day"—and then the bout is on and "interesting cases" are swapped as are stories in a Pullman smoking compartment. The topic upon which I wish to dwell this morning is: "What Constitutes an Interesting Case?" The approach to the question can be many-sided—the answers can be equally varied.

If one has talked with colleagues and has read reports of interesting cases in the literature, one must be struck with two factors that predominate: first, Rarity; and second, Incurability. Often the most important and convincing element in the entire report of the interesting case is the protocol of the necropsy. Does this state of affairs mean that ordinary treatable and curable cases are, therefore, uninteresting? Let us consider awhile the elements that go to make up an interesting case.

The object of medicine is three-fold:

1. Prevention—eradication of disease
2. Prophylaxis—protection from existing disease
3. Cure

Once a "case" of any sort is seen it obviously belongs to class 3. Consequently, the primary object of the practice of medicine lies in class 3 and consists in the proper administration of successful therapy. Therefore, the final goal of all medicine and surgery is therapy. But we must realize that adequate therapy is unavailable in the absence of accurate diagnosis; therefore, the two legs upon which rest the practice of medicine and surgery are diagnosis and treatment. No one realizes better than myself what platitudes I have just uttered; they seemed necessary, however, for the further development of the subject concerning which, as far as I can discover, very little has been written. My friend, Dr. W. R. Houston,[1] now of Austin, Texas, wrote a brief paper on this matter in the China Medical Journal some twelve years ago. That is practically the only reference to interesting cases in the abstract that I can find in medical literature.

The interesting case is primarily one that offers therapeutic possibilities, using the words in the broadest sense. Therapy must include both treating the disease the patient has and treating the patient that has the disease. Most diseases are not in themselves particularly interesting to treat. The thing that stimulates the physician is the interaction upon one another, of the particular condition from which the patient is suffering and the particular type of personality that is being affected by the presence of somatic pathology.

Throughout life in general it is true that the things we know best we find most interesting. Thus, the firmer grasp we can secure upon all phases of a given patient's condition, the greater interest will that patient evoke. Many of us, in fact most of us, do not get to the bottom of all that a patient can present because we find it practically impossible to give the necessary time to ferreting out details which, when put together, may fill in an important gap. It takes time to consider body, mind and spirit. It takes patience to discover behaviour characteristics, family skeletons, inferiority complexes, thought transferences, various conditions that the patient himself wishes to conceal—it takes far more time and patience than it does to make a careful routine physical examination and to have done, or do, the necessary laboratory work. But painstaking inquiry and tireless investigation will often bring to light a combination of facts that will turn the patient that promises to be a bore, and perhaps a nuisance, into a genuinely "interesting case."

"Interesting cases" are both born and made. Those that are born come under the head of "rare" or "unusual" and, as previously stated, are frequently incurable. There is a certain thrill in making a diagnosis of subacute bacterial endocarditis or of pulmonary carcinoma; but when that is done, what next? Merely the scientific attitude of waiting for proof at the autopsy table, coupled with a sense of futility and frustration and a sort of wonder as to how it is and why it is that we so often come to a dead end and are left baffled and helpless and hopeless. Then it is that we feel keenly the vain pleading of the patient's loved ones: "Doctor, isn't there something you can do?" How many times have we heard this, and how equally many times have we turned away with a lump in our throats because we could not bear to have to tell the young wife or the aging mother or the desperate father that in truth we could do nothing! The end of these "interesting cases" is sad indeed and makes all of us realize our pitiful limitations.

The interesting case that is "made" is quite another proposition. Here is found a challenge to the physician—not the challenge of life versus death, but the challenge of health versus sickness, of economic solvency versus penury and dependence, of joy and gladness versus gloom and wretchedness. Surely this is a challenge worthy to be met and accepted. As a matter of fact, it is the bounden duty of every physician to meet and to accept it. Unless he does so to the best of his ability he is derelict in the discharge of his professional obligations, and in the acceptance thereof he will experience a sense of happiness and of gratification which nothing else can give.

As a sub-title to this address, I have selected a well-known line of Alexander Pope: "The proper study of mankind is man." This statement applies most particularly to the medical profession. We all know that one of the great lures of our calling resides in the fact that we see human nature bare—in the raw; that we discover things that no other class of men discover; that we are the recipients of confidences never given to

others; that we carry about in our memories damning proofs of guilt and evidences of the highest type of heroism; and we also know that all these evidences that we receive serve to make the "interesting case."

I would not have you feel that I am pleading that every case should be an interesting one—I have practiced medicine too long to think that. I do feel, however, that all too often we physicians fail in not trying to place ourselves in the position of the patient—an individual who comes to us for relief of symptoms. Whether these symptoms are of organic or of functional origin or both, is up to us to decide; but irrespective of their etiology, they exist; and because of their etiology, the therapeutic management must vastly vary. It is in the correct evaluation of the etiological factor in the symptomatology and in the consequent adequate application of rational and understanding therapy that we doctors make or break our reputations.

Naturally the viewpoint of physicians will differ. The ones accustomed to seeing acute illness will not walk in exact step with those whose professional life consists of constant contact with chronic sufferers. The management of the case of lobar pneumonia is far removed from that of pulmonary tuberculosis, and the attitude adopted toward the case of perforated gastric ulcer is vastly different from that assumed in the case of diabetes. All four of these examples are, however, "interesting cases"—the acute medical and surgical emergencies chosen are intensely interesting over a brief period of time, at the end of which the patient is either dead or definitely convalescent. The two chronic medical examples exemplify conditions for which the patient must be supervised for years and toward which a totally different approach is necessary. The environment, social and domestic struggles, etc., are of no importance in the acute emergencies; they loom large in the chronic conditions. What makes the tuberculous case interesting? In part, the local pathological condition, its improvement or the reverse; in part, the effect of surgical procedures in influencing the diseased process; but most of all the reaction of the personality to the new environment, the psychic struggle that is going on, the combination of resignation and will-to-win, the character-building, that accompany every recovery. Why is the diabetic interesting? Partly because of the diet he can accept, of the gradual increase in carbohydrate tolerance, in the feasibility as times goes on to decrease insulin dosage, in the evidences of general betterment or, in other cases, of gradual metabolic failure. Surely these are all sources of interest, but there are others. The personal enthusiasm of the patient in seeking to understand his own condition; his immense concern over his diet; his self-control in the presence of temptation; his mastery of a new world composed of carbohydrates, proteins, fats and calories—his occasional diabetic jags when he "breaks training" and suffers in consequence; in short, the reaction of his entire personality to the soul-less demands of a decreased metabolic ability and a consequent lifelong adaptation to a changed mode of life.

No one who has listened to the outpourings of the soul of a tuberculous patient with his memories of the past, fear of the present and hope for the future can consider such an individual as anything but an "interesting case"; nor can anyone who has run the gamut of emotions with a diabetic (many of them, to be sure, purely dietetic) fail to realize that in the laying bare of the human element and of the human spirit that sustains the diseased body rest the groundworks of the interesting case. These examples have been chosen as types. They may be varied to suit the individual taste and experience.

Probably the most difficult patient to excite interest is the "chronic incurable"—the individual whose prognosis is absolutely bad and whose outcome depends not upon "if" but upon "when," which is best exemplified in the man or woman of sixty-odd exhibiting symptoms due to hypertension. Here is where the true physician must expend himself to his uttermost. A serious illness of his own is a real boon to the doctor. He then sees the reverse of the coin with whose obverse he is so familiar, and he gets the viewpoint of the symptom-conscious and of the bed-ridden; the one who is "looking up", whereas the doctor is always "looking down." I am sure that in our busy days we often fail to fully appreciate just how much visits with us mean to our patients or, sad to say, the reverse. I know that I have left a sick bed with the feeling that my visit had been of real value, even though no change in treatment had been made; and, alas, I also know that I have frequently gone out of a patient's room realizing that my visit had been mechanical and perfunctory. The patient had, that day at least, not been an "interesting case"; but the interest inherent in patients is, in the vast majority of instances, dependent upon what we put *into* the visit rather than what we get *out* of it.

All of which brings us inevitably to a consideration of the science and of the art of medicine. We could not do without the science, which has as its cornerstone the diagnosis and treatment of disease; nor could we do without the art, on which depends our estimate of the patient and our management of his personality; and while, because of the science, many cases are intrinsically interesting, because of the art almost every case can present some absorbingly intriguing phase.

In his presidential address before the Tri-State Society of the Carolinas and Virginia in 1932, Dr. Beverly R. Tucker,[2] of Richmond, stated: "It is the ability, I take it, not only to see the fact or the truth of medical science but to play one's knowledge, both acquired and intuitive, through the imagination around about, back, above, below, and ahead of the fact or truth; that constitutes the art of medicine." Elaborated, this statement implies that the broader the education of the physician, the more adequately he can solve the problems presented. The statement quoted is that of a neurologist and psychiatrist—it were well if many of us were more neurologically and psychiatrically-minded. Which of us fails to see so-called "neurotics"? How many of us after dealing with them for awhile turn away from them, dubbing them "nuts" and consigning them and their

ailments to limbo! Yet, they represent an element of suffering humanity—the point is to get the key to the lock. Here the physician with the larger aspect, with the greater extra-medical knowledge, with the broader humanitarian culture, will be the most apt to succeed. Too often these unfortunates need but a sympathetic personality that has some grasp (inadequate it may be, but patients put up wonderfully with our imperfections) upon that which holds their interest in life: it may be art, chemistry, religion, architecture, ceramics, poetry, politics or what have you—but somehow, somewhere, there must be reached a point of contact between the physician and the patient suffering from functional disease, or even between the physician and the patient suffering from organic disease with a functional overflow. Here it is that the broad-minded versatile practitioner will find a "receptor" where his less fortunate colleague will not.

The type of man that enters medicine with the art as well as the science (and I again quote Dr. Tucker) "sees through and around about the patient and becomes 'en rapport' with the whole situation, including the conscious or objective and the subconscious or subjective; with a faculty for the retrospective and a clinical instinct, he goes to the root, or, more often, to the roots, of the malady; he has the indicated laboratory work done and he interprets it in relation to the particular human being he is treating; he allows for technical errors and watches for incongruous findings; he contemplates, meditates, and brings to bear upon the diagnosis his knowledge, his experience, and, unwittingly perhaps, his imagination. Then, and then only, he arrives perhaps with great rapidity, at a tentative solution or at a definite conclusion. He is much more apt to be right than wrong, and if he is wrong, he is usually not far wrong, and he soon puts himself back on the right track. Now, and not until now, he applies his real therapy, and his treatment is not routine but resourceful. He remembers that the best medicine is frequently administered not in a pill or in a teaspoon but by sympathetic understanding and safe advice."

The words of Dr. Tucker will apply well to some patients that many of us see and to many patients that some of us see. Why have I quoted these sentences? Because in their essence they give to us the principles upon which is built the "interesting case." If we can look upon our patients other than those that come to us with an acute surgical or medical emergency or those that present the true "rarities" of medicine; I repeat, if we can look upon our patients that come to us day in and day out with the breadth of vision and the imaginative concept supported by Dr. Tucker, then truly shall we discover again and again "interesting cases"; and in the discovery thereof we will be stimulated and rewarded.

The inherent quality of the "interesting case" is the presentation of a problem to be solved. Some of these problems are so simple and obvious that they stick out like a sore thumb; some are more subtle, be they organic or functional, but still there is enough on the surface to urge us to further inquiry; still others, and, I am sure, by no means a small group, present at first sight no elements of interest but appear dull, colorless and

drab. It takes the artist as well as the scientist in medicine to unravel these patient-problems. We lose so much when we fail in our own minds to dramatize medicine—what a drama it presents! "The proper study of mankind is man"—and man in his reactions to disease, to heredity, to environment, to success, to failure, to happiness, to sorrow, to exultation, to fear; do not the consideration of all these factors constitute the practice of medicine, and is there not drama in each element? All of us in our offices have had dramas unrolled before us—the whole gamut of what is presented upon the stage—tragedy, naked and stark; comedy, both high and low; farce—at times—melodrama not infrequently. Why do we so often fail to grasp the significance of the presentation of the whole picture in its relationship to the functional and somatic complaints; of those whose role is a major or a minor one in the play of human emotions that is depicted to us in narration or more often in unconscious acting as we talk with our patient. Yes! there is drama in medicine and its appreciation and interpretation are potent forces in diagnosis.

The ability to dramatize is a real gift and tends to get one away from that standardization which is so ingrained in this country. The late Dr. C. Jeff Miller,[3] of New Orleans, had this to say: "Perhaps the most characteristic aspect of American civilization today is the trend toward standardization, and American medicine has become infected with the same virus. We have standardized our hospitals and our medical schools, and our patients are in all respects the better for it. We have standardized our laboratory methods and our medical and surgical therapeutics, and our patients are in many respects the better for it. But we are in a very great danger—I do not use the word lightly—of standardizing *ourselves and them,* and we are both the worse for it. There is a limit to the value of standardization, and I greatly fear that we have reached it. I know that it would profit us, and I am sure that it would not lessen our scientific efficiency, to be more personal and more human in our relationships, to regard as something more than cases and symptom-complexes the ailing men and women who turn to us for aid."

Dr. Miller is pointing us toward the art of medicine and indicating plainly that man cannot be standardized and that the study of man in relation to his environment cannot be governed by any hard and fast rule. It is by having no inelastic yardstick that one so often gets at the heart of things, and, when the entire situation is veiwed in a panoramic way, out crops the "interesting case!"

Sir William Osler once said that to treat patients without reading medical literature was like sailing an uncharted sea; but to read medical literature and not treat any patients was like not going to sea at all. It is thus with the science and the art of medicine. To have science without the art is not conducive to success; to have the art without the science is dangerous to those that are to be treated, though one sees many successful practitioners who get along on an absolute minimum of the science. They know people—"the proper study of mankind is man," and because

of their art they help enormously. And again, what is this Art of Medicine that to so many is a will-o-the-wisp ever sought and ever fleeing? Dr. Walter C. Alvarez,[4] who always writes so delightfully, has defined it in such simple terms that I must quote him. He says: "What is this Art? I should say that it is the knack of dealing with the patient in such a way as to gain his confidence, his respect and his liking; it is the knack of inspiring him with the feeling that here at last is a man who understands his case and will cure him; it is the knack of keeping his trust even when things go wrong, when health and comfort do not return, and when, perhaps, as is the case with many illnesses, things continue to go from bad to worse; and it is the knack of making the patient comfortable and of adjusting the prescribed treatment to his particular idiosyncrasies of mind and body." The physician who has these qualities so well pointed out will give much of himself to his patients, will receive much from them and will find himself surrounded by "interesting cases."

And so, finally, we are as it were turned back upon ourselves, forced to introspection, self-analysis and self-evaluation. We are forced to realize that we are not a guild apart, set away with our x-ray and our laboratory and our technical terms in a water-tight compartment; but that, on the contrary, we are part and parcel of this great flow of humanity, specialists in one of the branches of biology, particularly qualified to do certain things, discover certain things, deduce certain things; specially qualified to diagnose and treat disease, and specially qualified, if we have the right approach, to aid suffering men and women over the rough places of life, to restore a certain number—thank God a large number—to health and vigor; and specially qualified to stand by and ease and comfort those whose lot it is to land upon that shore from whose bourn no traveler returns. In so doing we reach heights which no others can scale and we plumb depths which no others can reach.

I hope that all of you have read Ian Maclaren's "A Doctor of the Old School." If you have not, you have a rare treat in store for you. It ends with the funeral of the well-beloved Doctor MacLure in the presence of practically the entire population of the village of Drumtochty and of Glen Urtach. The minister, Dr. Davidson, has selected the text to be placed upon his tombstone; it is: "Greater love hath no man than this, that a man lay down his life for his friends." Objection is made by one of those present because the doctor "didna mak mair profession o' re-leegion." Then Lachlan Campbell speaks up and says: "When William MacLure appears before the Judge, He will not be asking him about his professions, for the doctor's judgment hass been ready long ago; and it iss a good judgment, and you and I will be happy men if we get the like of it."

"It iss written in the Gospel, but it iss William MacLure that will not be expecting it."

"What is't Lachlan?" asked Jamie Soutar, eagerly. The old man, now very feeble, stood in the middle of the road, and his face, once so hard, was softened into winsome tenderness:

"Come ye blessed of My Father * * * * I was sick, and ye visited Me."

REFERENCES

1. Houston, W. R.—Interesting Cases—China Medical Journal, 1924.

2. Tucker, Beverly R.—Presidential Address Tri-State Society of the Carolinas and Virginia, 1932.

3. Miller, C. Jeff—Surgery, Gynecology and Obstetrics, Feb. 15, 1931.

4. Alvarez, Walter C.—Minnesota Medicine, 14:227 (March) 1931.

President Ringer: Next on the program is the report of the Committee on the Award of the Moore County Medical Society Medal for the best paper read at the 1935 session, and the presentation of this medal. The Committee consists of Dr. W. C. Mudgett of Southern Pines, Dr. Deryl Hart of Durham and Dr. William deB. MacNider of Chapel Hill. Which one of these gentlemen is present to make this presentation?

Secretary McBrayer: Mr. President, I think President-Elect Strosnider has a matter that he wants to present at this time.

President Ringer: That was my mistake; I disturbed the order of the program. I will recognize Dr. Strosnider. (Applause)

Dr. C. F. Strosnider (Goldsboro): Members of the Medical Society of the State of North Carolina, Ladies and Guests: It gives me genuine pleasure to represent the members of the Medical Society of North Carolina in the duty that is now mine.

Mr. President, organized medicine has made great progress during the past year in North Carolina under your capable leadership. Demand for your help and guidance has come from every section of our state. Your response has been prompt, sympathetic and helpful. You have been an inspiration for the members of our organization to do their best work individually and collectively—always promoting harmony and coöperation in the Society.

This is an occasion in which all of us rejoice with you in the culmination of your progressive and successful administration.

So, on behalf of the membership of the Medical Society of the State of North Carolina, and in token of our appreciation of the numerous sacrifices you have made in the performance of your duties as our chief executive, I now present to you, Dr. Ringer, the President's Jewel, and with it our love and best wishes for a long life with a rich reward of health and happiness to enjoy the fruits of your labors. (Applause)

President Ringer: I am greatly appreciative of what Doctor Strosnider has said. This Jewel that has been presented to me will always be treasured as an evidence of a high position that I have occupied among the men of the Medical Society of the State of North Carolina, but most of all, as I stated at the beginning of my address, as an evidence of the confidence of the affection and of the belief in me—not so much as a physician, but as a man—on the part of the doctors of this State.

For that belief and that confidence, I thank you from the bottom of my heart. (Applause)

Before we go to the next item on our program I should like to say that we have a very distinguished guest with us, whose identity I will not disclose, because I would like to ask Doctor Hartwell Cocke of Asheville to disclose that identity. The distinguished guest will then make his bow to us.

Dr. C. H. Cocke (Asheville): Mr. President and Fellow Members of the Medical Society of the State of North Carolina: Time was when this country looked very much to the South for leadership in affairs, professional and national. In the early times I need mention but a couple of names that resounded through the pages of medical history, to show the leadership of the South—Ephraim McDowell and Marion Sims, to mention but two.

Again the South may point with considerable pride to the fact that at this present moment, perhaps in fact it has escaped the notice of most of you, but the President of the American Medical Association, the first Vice-President of the American Medical Association, the President-elect of the American Medical Association—the parent association of us all, the largest body of medical men in the world—and also the President of the American College of Physicians, the largest coherent body of men specializing in internal medicine—are all men born and bred and of the South. They are men of leadership and of vision, of distinction and of experience.

It is therefore, Mr. President, a rare privilege to present to this distinguished body, my colleague and great friend, Doctor Ernest B. Bradley, of Lexington, Kentucky, President of the American College of Physicians. (Applause)

Dr. E. B. Bradley: When Doctor Cocke, as the Chairman of the Board of Governors of the American College of Physicians, asked me whether I would come down to the luncheon of the members of the College today, he made it very plain that I would not have to make a speech. So I accepted. But I was very glad that I got here in time this morning to hear your president, Doctor Ringer, make his presidential address, because I have an ordeal of this sort to go through next spring when the College meets, and I hadn't quite made up my mind as to where I was going to get my presidential address.

But I think that, having made one of these so well this morning, perhaps Dr. Ringer could be prevailed upon to help me out a little bit next spring. (Laughter)

It is a great pleasure for me to meet with the profession of North Carolina. Of course Kentucky is very close to North Carolina. In fact I have always thought it would have been more appropriate to say "as the Governor of North Carolina said to the Governor of Kentucky" instead of "as the Governor of North Carolina said to the Governor of South

Carolina." It seems to me they are closer together. We furnish a good deal of the tobacco, you know, that you make into cigarettes that we smoke later, and in many other ways we feel very closely related.

It is a great pleasure to me to be with you here and to appear before you. However, I will say this about these distinguished gentlemen who have been elected presidents and presidents-elect and so forth, from the South: It isn't due entirely to them that the Southerners have gotten these positions; but it is, I think, because the Southerners seem to be more politically minded, perhaps, (laughter) than some of these other people. They slip up on their Northern brothers. (Laughter)

I want to thank you for letting me appear here, and I want to say that I am enjoying myself very much. (Applause)

President Ringer: We will now have the report of the Committee on Award of the Moore County Medical Society Medal. Who is here to make that award?

The Secretary has a communication in connection with that.

Secretary McBrayer: Is Dr. Hart here or Dr. MacNider of Chapel Hill? They are two members of the Committee and neither one seems to be here. So in their absence I have this, Mr. Chairman, that I will read; it is directed to the secretary: "I am handing you herewith the report of the Committee on Award of the Moore County Medical Society Medal." This as you all know, of course, is for what has been considered the best paper presented before the profession last year.

Following is their report: "The majority of the Committee (I would like to call your attention to the word "majority") has decided to award this medal to Dr. Arthur H. London, Durham, North Carolina, for his paper on 'The Composition of An Average Pediatric Practice.' " Will Dr. London come forward? (Applause)

"The medal is in your hands and I will probably be unable to be present at the meeting in Asheville. I would suggest that you ask one of the other members of the committee, if they be present, or in the event of their absence, would you be so kind as to confer the medal upon the recipient?

"Appreciating your coöperation and assistance in our several conferences on this matter, we are, very sincerelly yours, W. C. Mudgett, Chairman."

I think it is a great honor to receive this medal, and I think the mechanics of the selection of the best paper is perhaps one of the best things that I have seen prepared.

A committee is appointed in each section to pass on the best paper in that section. That gives the State Committee six papers to judge, and it takes a good deal off their shoulders, because to have to read and grade all the papers would be a very burdensome job. The committee of members who first pass on the papers is composed of eighteen as a rule; they

get the number down to six, one from each section, and then the three members of the State Committee make the final decision.

I am sure that Dr. Mudgett, Dr. MacNider and Dr. Hart are as satisfactory and as capable in the matter as we could wish for. They are so interested in doing the right thing that I don't think they have ever agreed unanimously on a paper for the last few years, since they have been serving on this committee.

So that you, Dr. London, my friend, have not only had your paper submitted to the State Committee of three, but it was submitted to your own section, passed on first in your section. I assure you it gives me pleasure, and it gives the Medical Society of the State of North Carolina pleasure, to present to you this medal for the best paper read at the 1935 meeting of this body. I congratulate you. (Applause)

President Ringer: We will now have the report of the Obituary Committee, composed of Dr. C. A. Woodard of Wilson and Dr. J. F. Abel of Waynesville.

Dr. Abel!

Dr. J. F. Abel (Waynesville): Mr. President, Gentlemen of the Society: In the scramble and hurry to get through this interesting program and get back to our work, we come to page 12 of this program and we are caused to pause and take notice.

There is a long list of our members, probably a little longer than heretofore; and in looking over this list we are struck with the trite saying of the poet, who said that "the charms of innocence cannot elude the grasp of the grim monster." We are also reminded that the trained physician himself cannot elude his grasp.

And while we stop to pay a tribute to our lamented dead, let us stand, friends, just for a minute (the audience arose) while I call the names:

NORTH CAROLINA DOCTORS WHO HAVE DIED DURING THE YEAR

*Dr. Thos. Eli Anderson (Honorary Fellow), Past President ..... Statesville
*Dr. K. G. Averitt (Honorary Fellow) ..... Cedar Creek
Dr. Donald Baird ..... Barnardsville
*Dr. Julian M. Baker (Honorary Fellow), Past President ..... Tarboro
Dr. Julian C. Baum ..... Elizabeth City
*Dr. Alexander McNeil Blair (Honorary Fellow) ..... Southern Pines
Dr. D. T. Boger ..... Rt. 2, Monroe
Dr. Augustus C. Boyles ..... Mount Airy
*Dr. B. U. Brooks ..... Durham
Dr. Wm. Burdette Chapin ..... Pittsboro
*Dr. John T. Burrus (Honorary Fellow), Past President ..... High Point
Dr. Luther N. Conoly ..... Camden, N. J., and Phila. Red Springs
*Dr. C. C. Craft ..... Hickory
Dr. W. Sinclair Davidson ..... Newland
*Dr. Wm. H. Dixon (Honorary Fellow) ..... Ayden

*Members in good standing.

Dr. Joseph W. Duguid ..... Dover
*Dr. Hall M. Eddleman (Honorary Fellow) ..... Gastonia
Dr. C. A. Flowers ..... Wendell
Dr. Wm. G. Francis ..... Waynesville
*Dr. Rosa H. Gantt ..... Tryon
*Dr. Cecil Garrenton ..... Bethel
*Dr. Wm. Ruffin Goley ..... Shallotte
*Dr. Geo. J. Gouger (Honorary Fellow) ..... Concord
*Dr. L. V. Grady ..... Wilson
Dr. T. H. Higgins ..... Trap Hill
Dr. A. R. Hodge ..... Severn
Dr. James McKnight Hunter ..... Millers Creek
Dr. Charles Cushing Jackson ..... Yeatesville
*Dr. Parron Jarboe ..... Greensboro
Dr. Russell Jarman ..... Whithall, Ill. Burlington
Dr. R. B. Killian ..... Lincolnton
*Dr. Augustus W. Knox (Honorary Fellow), Past President ..... Raleigh
Dr. Mary E. Lapham ..... Highlands
Dr. P. O. Leggett ..... Southport
Dr. H. S. Lott ..... Winston-Salem
*Dr. W. D. MacMillan (Honorary Fellow) ..... Vista
*Dr. Isaac N. McLean ..... Burnsville
Dr. Charles North Mason ..... Newport
Dr. Charles H. C. Mills ..... Charlotte
Dr. Seth Jones Montague ..... Durham
*Dr. George Edgar Newby ..... Hertford
Dr. Walter Byrd Pollard ..... Winton
*Dr. H. T. Pope (Honorary Fellow) ..... Lumberton
Dr. Frederick L. Potts ..... Washington
*Dr. Thomas C. Quickel (Honorary Fellow) ..... Gastonia
Dr. Robert D. Ross ..... Wadesboro
Dr. Jacob Harrison Shuford ..... Hickory
*Dr. Lawson Lee Simmons ..... Greensboro
*Dr. Arthur Ogburn Spoon ..... Greensboro
*Dr. Charles S. Tate ..... Ramseur
Dr. H. W. Tidmarsh ..... Whittier
*Dr. Joseph Pinckney Turner (Honorary Fellow) ..... Greensboro
*Dr. O. E. Underwood ..... Roseboro
Dr. Robert Cleveland Williams ..... Wallace
*Dr. R. B. Wilson (Honorary Fellow) ..... Clinton

My friends, the scientific man and probably the doctor looks upon this in a natural way and thinks of these as the number of casualties on the firing line; but in families, communities, civic organizations, and even the state, it is looked upon as a tragedy, and when these fell at sunset, they went down as a mighty oak, green of branches goes down, leaving a blank, vacant space against the sky.

K. G. AVERITT (Honorary Fellow)

At a meeting of the Cumberland County Medical Society a Committee composed of Dr. J. F. Highsmith, Sr., Dr. J. A. Shaw, and Dr. P. W. Olive,

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*Members in good standing.

was appointed to express the regret of the Society in the death of Dr. K. G. Averitt. The Resolution follows:

Resolved: Whereas our Heavenly Father, the Great Physician, has seen fit to take from our midst our beloved friend and co-worker, Dr. K. G. Averitt,

Be It Resolved that the members of the Cumberland County Medical Society extend their deepest sympathy to his widow and children.

Dr. Averitt was an untiring worker in Cumberland County since his graduation from the University of Maryland Medical College in 1893. He was licensed to practice in the State of North Carolina May 13, 1893. He served his country in the Volunteer Medical Service Corps at Fort Bragg, N. C., during the World War; was a past-President and Honorary Member of the Cumberland County Medical Society, and an Honorary Fellow of the Medical Society of North Carolina of which Society he was Vice-President in 1925. Dr. Averitt was a member of the Tri-State Medical Society and a Fellow of the American Medical Association. He served on the Cumberland County Board of Health for many years, and was a member of the Board at the time of his death. He was also a member of the State Board of Medical Examiners at the time of his death and had served as President of that body. Dr. Averitt was well informed on all medical subjects and had one of the best libraries of any general practicing physician in the State.

Dr. Averitt will be greatly missed in the profession. His counsel was extensively sought, and his influence will be handed down for years to come.

Be It Further Resolved that a copy of these Resolutions be sent to the family of the deceased, to the *Fayetteville Observer,* the North Carolina Medical Society, the *Southern Medicine and Surgery,* and same incorporated in the Minutes of the Cumberland County Medical Society.

Committee:

J. F. Highsmith, M.D.
J. A. Shaw, M.D.
P. W. Olive, M.D.

LAST RITES FOR DR. T. E. ANDERSON

Funeral Held at Home on Walnut Street Thursday

Relatives, friends from near and far and citizens of the community irrespective of race or creed gathered at the home of the late Dr. Thomas E. Anderson yesterday to pay their last tribute of respect to the memory of one who in life was loved and honored by all with whom during a busy and eventful career he had come in contact.

Services at the home on Walnut Street were conducted by Rev. Chas. E. Raynal, assisted by Rev. John W. Hoyle, presiding elder of the Statesville district. In well chosen words Dr. Raynal, friend of the deceased and

of the family for many years, spoke feelingly of his life and works. It was undoubtedly words from the heart, a tribute of affection and esteem of one who had been more than a physician to those who sought his services, a real counsellor and friend besides.

Interment was in Oakwood cemetery and the active pall bearers were nephews of Dr. Anderson: Messrs. Esley O., Fred and Edward Anderson and J. J. Akers, of Charlotte; Frank Anderson, of Raleigh; and James M. Anderson, of North Wilkesboro. Serving as honorary pallbearers were the members of the Iredell-Alexander Medical Society and friends.

In addition to the business and professional men of the city as well as many from all walks of life the following physicians from out of town were in attendance at the obsequies:

Dr. J. T. Burrus and Dr. D. A. Stanton, of High Point; Dr. G. M. Cooper, of the State Board of Health, Raleigh; Dr. James K. Hall, of Richmond; Dr. H. C. Henry, of Petersburg, Va.; Dr. A. J. Crowell, Dr. J. M. Northington and Dr. Watt S. Rankin, of Charlotte; Dr. George W. Taylor and Dr. E. A. Bell, of Mooresville; Dr. L. A. Crowell, Sr., of Lincolnton; Dr. Lucius Glenn, of Gastonia; and Dr. J. S. Talley, of Troutman.

Dr. Thomas E. Anderson, 84, native of Statesville and practicing physician here for fifty years, passed away at his home on Walnut street Tuesday evening at 5:15.

Dr. Anderson was born August 8, 1851. His parents were Mr. Thomas C. Anderson of Hillsboro, N. C., and Mrs. Nancy Adeline Ramseur Anderson of Statesville.

In 1868, at the age of 17, Dr. Anderson went to Taylorsville, Illinois, where he worked as a druggist and studied medicine under Dr. Charles Rockwell, a prominent physician of Illinois.

In academic school, he was the private pupil of Professors Stevens and Jewett. In the study of medicine, he attended the Rush Medical College of Chicago. Afterwards, he was an interne at the Cook County Hospital of Chicago for two years. He took graduate work and post-graduate work at the Jefferson Medical college in Philadelphia finishing in 1878.

The deceased was a member of the Methodist church serving as a steward for many years.

He began the practice of medicine in Statesville in 1878 and retired from practice in 1930.

Since 1892, he has been a surgeon for the Southern Railway; was on the Board of State Medical Examiners; held the office of secretary and vice-president and the chair of physiology on the latter board; belonged to the Medical Society of North Carolina of which he was president in 1921; was an active member of the State Board of Health from the time of his election to the Medical Society (May 24, 1905) until 1931.

He was married to Miss Ina Marion McCall of Marion County, South Carolina, by whom he is survived with the following children: Dr. Allen

R. Anderson of New York City, Thomas H. Anderson, Grace C. Anderson, and Ina M. Anderson of Statesville. The only surviving member of his father's family is George R. Anderson of Statesville.

The death of Dr. Anderson has removed a veritable institution from Statesville. He was widely known, as well as widely loved. Many a person, who has been a victim to the sicknesses which befall humanity has had cause to thank this benevolent old man of medicine. His gentle ministry will be greatly missed by young and old, rich and poor and white and black, all of whom mourn for him. Like the doctor, who when he died, had his sign removed from his office and placed over his grave, his shingle in the opinion of those who knew him best might be removed from the portal of his office and placed on the marker at the head of his resting place, "Office Upstairs."

DR. T. E. ANDERSON PASSES AWAY MAY 12, 1936, AT AGE OF 84

Beloved Physician Had Practiced Here For Over 50 Years
Funeral Service Thursday, 11 A. M.

Dr. Thomas E. Anderson, beloved physician, who practiced medicine in Statesville and Iredell County for more than half a century, passed away Tuesday afternoon at 5:15 o'clock at his residence on Walnut street. He had been in declining health for about five years, due to a complication of ailments. He was 84 years of age.

The funeral will be held Thursday morning at 11 o'clock from the residence on Walnut street, and interment will follow in the family plot in Oakwood cemetery.

Dr. Anderson was born August 8, 1851, in Statesville, the place of his birth being on West Broad street where Broad Street Methodist Church now stands. He was a son of Thomas C. Anderson of Hillsboro, N. C., and Nancy Adeline Ramseur Anderson of Statesville. Being a boy of ten years when the War Between the States started, he often recalled with extreme clearness incidents connected with that fratricidal struggle, and the entry of the northern troops in Statesville in 1865.

Dr. Anderson in early boyhood attended the school of the community, but his academic training was received under Prof. G. W. Jewett, a refugee from Wilmington, who conducted a private school in Statesville, where Mr. C. H. Turner's residence now stands. He was later a private pupil under Prof. Samuel J. Stevens, of the faculty of Concord Female College, now Mitchell College. He studied Latin under Professor Stevens, sometimes appearing at 4 o'clock in the morning to recite.

In 1868, Dr. Anderson went to Taylorsville, Ill., and had experience there as a druggist, also while there studied medicine under Dr. Charles Rockwell, a prominent physician of Rockwell, Ill. He was student in Rush Medical College, Chicago, and graduated from Jefferson Medical College, Philadelphia, in 1880. His interne work was for two years in Cook County Hospital, in Chicago.

He returned to Statesville in 1882 to begin the practice of medicine and was active as a physician here for more than half a century. For five years prior to beginning the practice of his profession in Statesville, Dr. Anderson was associated with Mr. Logan Stimson in the operation of the drug store on West Broad street, the partnership being known as Stimson and Anderson.

Dr. Anderson was a life-long member of Broad Street Methodist Church and served for many years as a member of the board of stewards.

Dr. Anderson served for six years as a member of the North Carolina Board of Medical Examiners, was a member of the North Carolina State Board of Health for many years, holding the offices of secretary and vice-president in that organization, was president of the North Carolina Medical Society in 1921 and had been surgeon of the Southern Railway since 1892. He served for a number of years as superintendent of health of his native county of Iredell.

In 1887, Dr. Anderson was united in marriage to Miss Ina Marion McCall, of Marion County, S. C., who was at that time a member of the faculty of Statesville Female College, now Mitchell College. Mrs. Anderson survives and four children, two sons and two daughters: Dr. Alan R. Anderson of New York City, Mr. Thomas H. Anderson, Miss Grace C. Anderson and Miss Ina M. Anderson, all of Statesville. Dr. Anderson is also survived by one brother, Mr. George R. Anderson, of Statesville.

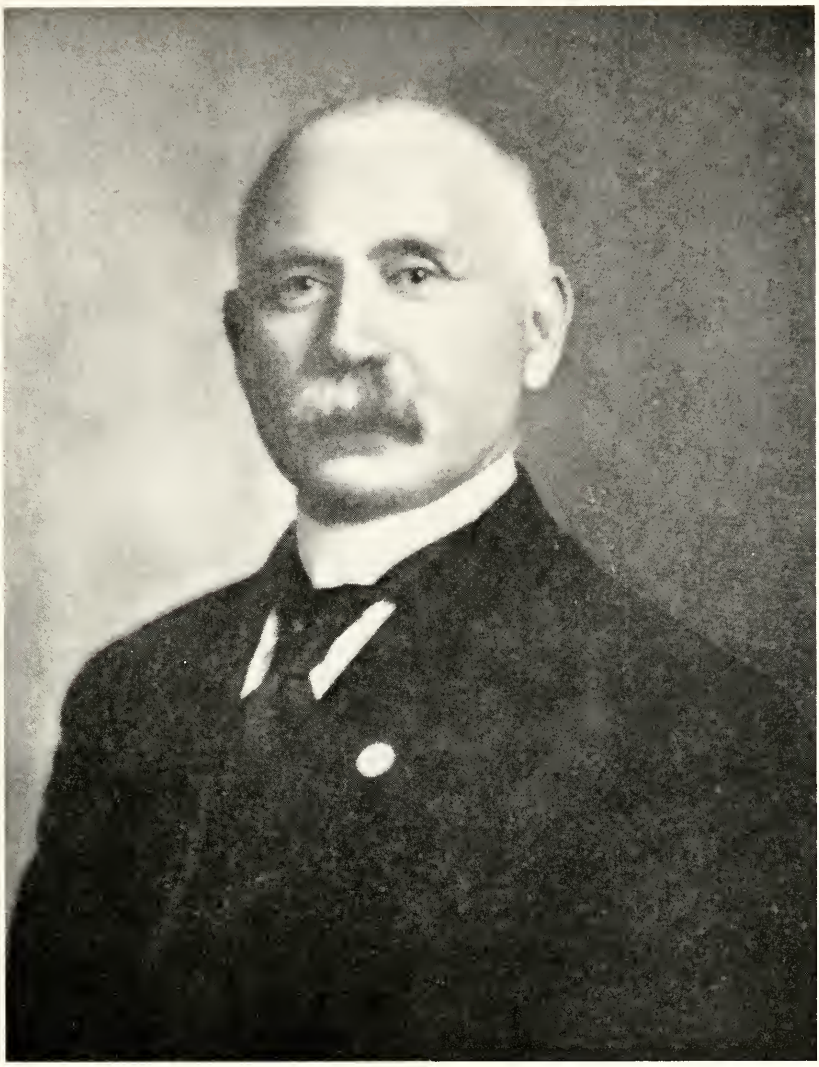
DOCTOR TOM

This morning Statesville paused to follow the bier of one of the city's best-loved citizens to Oakwood cemetery, where all that is mortal of Dr. Thomas E. Anderson will rest among other stalwart landmarks that in recent days have populated that quiet little city of the dead.

"Doctor Tom," as his older friends will always remember him, in late years had not been privileged to mingle with the people he loved. He was at home, waiting for a Visitor that in his wisdom, Doctor Tom knew would come, certainly and relentlessly. As a physician of the first water he knew that Time takes its toll, and that by the inexorable laws of nature—it would not be long.

Because of his semi-seclusion in late years, the younger of us were not in position to make competent appraisal of his worth. And what a gem these have missed. But those who knew Doctor Tom in the heyday of his physical and mental power, knew him for what he was and loved him and appreciated him therefor.

In the practice of his profession he brought to it outstanding ability that was unusual in the day of his young manhood when physicians were not equipped as they are today; when the family doctor had to work with what he had at hand; when there was no specializing in this and that, but when the practicing physician must be all-inclusive in his knowledge of human ills. It is significant, then, that Doctor Tom measured up.



Very truly Your
Thos E Anderson

While this veteran of the days of the saddle-bags was versed in all the ramifications of his calling, and while his ministrations to the people of this community were based on ability and sound application of medical and surgical principles, there are those who will thankfully tell you that he did not depend on this alone. The manner in which he mixed humor and friendliness with the milk of human kindness when he went into the home, probably bolstered the health and strength of as many patients as did his pills.

Doctor Tom was part and parcel of Statesville, almost from the beginning. He had tramped the muddy streets, and dodged around ox-drawn carts from the back-country, when Statesville was but a wide place in the road. He had watched Statesville grow from a hick town to a splendid little city—and had no small part in the building.

He was known and loved throughout the state, in his profession and out of it. He had held places of great responsibility, and, as was characteristic of the man, he filled them well because he always took his duties seriously.

Doctor Tom was first of all a Christian gentleman. He loved his church and made personal application of the teachings of his Master, and now he goes to meet his Pilot face to face. We know that he went unafraid.

—Editorial from Statesville.

DR. KIRBY G. AVERITT

By J. F. Highsmith, Sr., M.D., Fayetteville

Kirby Gladstone Averitt was born March 10, 1870, at Stedman, Cumberland County, N. C. After graduating with honors from the Clement High School in 1887, he entered the University of Maryland in 1890 and graduated from that institution in 1893. He was licensed by the Board of Medical Examiners of N. C., May 13, 1893.

On September 15, 1935, Dr. Averitt, while at his post of duty in attending a very difficult obstetrical case, was suddenly stricken with an attack of cerebral hemorrhage and three days later he died in Highsmith Hospital. He had been about his regular duties and was hard at work until the summons came. His son, who was with him while attending this last case, requested that he go home, but he insisted upon staying with his case until he had himself, under most sterile precautions, catheterized the patient preparatory to delivery.

Dr. Averitt was the old time type general practitioner and will be greatly missed. He worked hard and played little. He attended postgraduate courses and lectures on pediatrics and internal medicine at various times. He served his country in the Volunteer Medical Service Corps at Fort Bragg, N. C. He was a past-President and Honorary Member of the Cumberland County Medical Society, and an Honorary Fellow of the Medical Society of North Carolina of which Society he was Vice-President in 1925. Dr. Averitt was a member of the Cumberland County

Board of Health for many years. At the time of his death he was a member of the State Board of Medical Examiners, and he had served as President of that body. He was a Fellow of this Association and of the American Medical Association. Dr. Averitt was well informed on all medical subjects, and had one of the best libraries of any general physician in the State.

Dr. Averitt will be greatly missed in the profession. His counsel was extensively sought, and his influence will be handed down for years to come.

Leaves have their time to fall
And flowers to wither at the North wind's breath,
And stars to set; but thou has all Seasons
For thine own—O Death!

JULIAN MEREDITH BAKER

Your Committee, the Edgecombe-Nash Medical Society, presents the following sketch of the life of Dr. Julian Meredith Baker, to be preserved in the minutes of this Society.

Julian Meredith Baker was born in Tarboro, North Carolina, October 26, 1857, the son of Dr. Joseph H. and Susan Foxhall Baker. He died on October 19, 1935. He received his preliminary education in the school of Professor Frank Wilkerson, of Tarboro, and later attended Horner and Graves Military Academy of Hillsboro, N. C. He attended the University of Iillinois, where he was a student in the academic department for two years. Then he entered the University of North Carolina, from which he graduated with the degree of Bachelor of Science in 1877. He was a member of the Phi Kappa Sigma Fraternity. He was a student of Bellvue Medical College one year and then transferred to the University of Maryland at Baltimore, from which he graduated with the degree of Doctor of Medicine in 1880. He began the practice of his profession in Tarboro following his graduation and did general practice until 1906, when he began doing surgery in connection with his general practice. He probably did many surgical operations before this time, as he was a real pioneer of this section in the surgical field. He did much post-graduate study; attended the Polyclinic Hospital Post-graduate School, the New York Post Graduate School, the Bellvue Hospital Post-graduate School, the Chicago Post-graduate School and Mayo's Clinic, and made frequent visits to the clinics of the large medical centers of the country.

Dr. Baker was regarded as one of the most eminent physicians of the State and was honored by the medical profession on many occasions. He was Surgeon General of the North Carolina State Guard, during the administration of Governor Carr. He was a member of the Board of Medical Examiners for six years and was President of the State Board of Medical Examiners four years. He served one year as President of the State Medical Society. He was a member and past President of the Edge-

combe County Medical Society. He was a member of the Fourth District Medical Society, a member of the Seaboard Medical Society and a member of the American Medical Association and American College of Surgeons.

Dr. Baker was at one time Mayor of the City of Tarboro; Chairman of the Board of County Commissioners; the first Public Health Officer of Edgecombe County and at the time of his death was Chairman of the Board of Education and Chairman of the Local Chapter of the American Red Cross. He was a member of the Presbyterian Church, a member and Past Master of Concord Lodge, A. F. and A. M., a member and past High Priest of Concord Chapter Royal Arch Masons, a member of St. Bernard Knights Templar No. 4 Rose Croix and Charlotte Consistory, and a Thirty-Second Degree Mason. He was a life-long Democrat, yet considerate and tolerant of those who entertained different views.

Dr. Baker was the organizer of the Pittman Sanatorium, which became the present Edgecombe General Hospital. This was the first hospital in Edgecombe County and probably antedates most of the hospitals in the nearby counties. It was probably his work for this institution which gave him his greatest joy and received his greatest interest. He gave largely of his time and means to this institution, and it is due to his untiring efforts that this hospital has attained its present standard. About the year 1920 he retired from the general practice of medicine and surgery and began the treatment of cancer by X-ray and radium, being also a pioneer in this field. He established a cancer clinic in the Edgecombe-General Hospital, where many sufferers were relieved or benefitted by his treatment. Dr. Baker spent his entire life in his native city, preferring to minister to the sick and needy of his own community, rather than to accept offers and inducements that were tendered him elsewhere. The Doctor loved life and people. He was truly social. While an aristocrat in taste and values, he was in a true sense a democrat. He made the simplest man his friend and equal. His generosity, his tireless energy and enthusiasm, his tolerance and his unwavering championship to everything to which he belonged and which belonged to him, were his greatest vices.

He was married on June 17, 1884, to Miss Elizabeth Howard. To this marriage three daughters were born, namely, Mrs. Anna Baker Fenner, Mrs. Sue Baker Green, and Mrs. Elizabeth Baker Sprague, all of whom survive him. The Doctor loved his family and they were always his first concern. They fully appreciate the rich heritage which is theirs. He is mourned by his family and countless friends; he is remembered most fondly by those who worked with him and by those aged and unfortunate, who counted him with their comfort. In the passing of Dr. Baker, all within his wide circle of friends feel a deep sense of personal loss. Distinguished in the profession which he faithfully served for more than half a century, he retained the enthusiasm of a student. He greatly enriched his profession with the results of his thought and study. Words can but feebly express the charm of his attractive nature. He was a loyal friend and faithful physician. He had a kindly manner and his patients and

friends admired him as a physician and loved him as a man. The Edgecombe-Nash Medical Society wishes to express its appreciation of the life service and sterling qualities of Dr. Baker.

Therefore, be it resolved that this sketch of the life of Dr. Baker be spread on the minutes of this Society, and a copy sent to his widow.

J. G. Raby,
A. C. Norfleet,
W. B. Hooks.

DR. JOHN TILDEN BURRUS

At a meeting of the Board of Trustees of the Burrus Memorial Hospital, held on Monday, June 15, 1936, the following resolution was unanimously adopted:

Whereas; on the eighth day of June, 1936, our Heavenly Father summoned to his reward the soul of our friend and leader, John Tilden Burrus, surgeon and doctor, therefore be it

Resolved: That we desire to express our sorrow for the loss of his wise leadership, and the warm personal friendship he held for each member of the Board.

Few men in his profession have ever made so marked an impression on the community life. Although warned to slow up, he deliberately chose to continue the full, rich, generous, beneficent life he had always lived, and had abated none of his manifold activities. He will be missed not merely for his great professional qualities, but for his vivid and untiring interest in every good cause, and his devotion to his friends of whatever color, condition or race. His life was full and complete far beyond his fifty-nine years.

He stood for high ideals of honor and integrity, and few men have been so truly loved and so completely trusted. He gave unsparingly of his time and strength and means to unnumbered causes. A noble example as a citizen, as a Christian, as a man. We shall ever hold his name in loving and honored remembrance, and endeavor to build faithfully upon the solid foundation he laid for the care of the sick and unfortunate.

May he go from strength to strength in the life of perfect service in the heavenly kingdom.

For the Board of Trustees
Signed: H. L. Brockman, *Secretary,*
Signed: A. Norwood Bowne, *Chairman.*

DR. J. T. BURRUS, PROMINENT HIGH POINT SURGEON AND CIVIC LEADER, IS STRICKEN

High Point, June 8.—Dr. John Tilden Burrus, 59, surgeon, soldier, twice a member of the North Carolina Senate and holder of many of the honors awarded by the medical profession, died this afternoon at 3:40 o'clock at Burrus Memorial Hospital after a heart illness since 1 o'clock

John T. Burrus, M.D.

yesterday. The end came before the outcome of the North Carolina gubernatorial contest, in which Dr. Burrus had taken a forceful part, had been finally determined.

The body will lie in state at the Burrus residence, 207 Boulevard, from 10 o'clock Tuesday morning until Wednesday afternoon at 3 o'clock when the funeral will be held at the same place, followed by interment in Oakwood Memorial park. Trustees of Burrus Memorial Hospital, of which Dr. Burrus was general manager, and members of the medical profession who attend the funeral will be honorary pallbearers, while his medical associates, Dr. H. L. Brockmann, Dr. P. W. Flagge, Dr. Emmett Sumner, Dr. O. B. Bonner, Dr. H. F. Long, Dr. S. S. Saunders, Dr. Kenneth Geddie and another hospital attache, John Long, will be active pallbearers.

MESSAGES POUR IN

The news of Dr. Burrus' death had hardly broken on the streets until telegrams from prominent persons in North Carolina began to reach Mrs. Burrus. Among these were messages from Dr. L. B. McBrayer of Southern Pines, Highway Commissioner and Mrs. Capus M. Waynick, George Ross Pou and many others. At the same time people of every walk of life in High Point, both black and white, stopped at the hospital and the Burrus home to leave their word of sympathy for the widow of a man noted for his generosity and kind heart as well as for professional skill and eminence in public affairs.

Dr. Burrus was born on a farm at Rockford in Surry County, July 13, 1877, the son of John G. and Elizabeth Reece Burrus. He attended Yadkin Valley institute and graduated at Davidson College, later taking his medical degree at Grant University. In 1899 he was married to Miss Mary Belle Atkins, of Jonesville, who with his son-in-law, Dr. Hugh Black, of Spartanburg, S. C., are his only survivors. His only daughter, Mrs. Hugh Black, died three years ago.

He practiced medicine at Jonesville from 1899 to 1904 when he came to High Point. In 1909 he took over the Junior Order hospital at High Point which later became High Point hospital and in 1932 was changed to Burrus Memorial Hospital when its title was transferred, partially by gift to the Duke Foundation.

HAD HELD MANY HONORS

During his life which was cut off today in its prime he has held many honors conferred by members of his profession and by Guilford County citizens who twice chose him to represent them in the Legislature, in 1931 and in 1935. He was at one time president of the North Carolina State Board of Health, president of the North Carolina State Medical Society, member of the Tri-State Medical Society. During the world war, he was at the base hospital in Beauregard, La., serving first as chief surgeon and then as its commander. He was a member of the First Baptist Church.

There will be no racial distinction for those who walk by his bier while his body lies in state. Mrs. Burrus this afternoon asked the *Daily News* to invite all of his friends, white and black, who so wished to pass by the casket.

DR. BURRUS

We shall remember Dr. John T. Burrus best as president of the State Board of Health, in which capacity we knew him best. The dynamics of the man were no doubt as impressively manifest in numerous of his other capacities. To the State he was both a leader in the profession of medicine and a leader in politics. He had been, especially of late years, a notable figure in the Democratic party, a factionist of force in the State and in his community. In High Point he was thought of more as the kind and generous neighbor and skilled surgeon.

He was endowed with the great strength of mind and body, the supreme virtue of courage, without which no matter how skilled the hand or how sure the instinct for this exacting art no man arrives at eminence in surgery. Whatsoever his hand found to do Dr. Burrus did it with much the same spirit which dominated a morning's work at the operating table, exhibiting a harmony of qualities most fascinating.

The combination of successful surgical specialist and political leader is an unusual one, although there have been notable examples before Dr. Burrus of the doctor in politics. Dr. Cyrus W. Thompson was not especially eminent in medicine when, a young man, he set the State on fire as an orator, one of the central figures of the hottest period in North Carolina history, but his political activities subsiding he moved on to the top in his profession, and died one of the most beloved and respected figures. Dr. Burrus somewhat reversed the process; he had won his place in medicine before the State came to much knowledge of him as a participant in public affairs.

Dr. Burrus must have thought, first and last, a good deal about the governorship, for so many of his friends and admirers, in his own neighborhood and all over the State were eager to follow his leadership in that direction.—*Editorial Greensboro News.*

BAIRD URQUHART BROOKS, B.S., M.D.

Dr. Baird Urquhart Brooks was born at Castalia, Nash County, North Carolina, on January 19, 1881. He received the degree of Bachelor of Science at the University of North Carolina in 1901, attended the medical school there from 1901 to 1903 and was graduated from the University of Maryland School of Medicine in 1905. He commenced the practice of medicine in West Durham in 1906. When the call to arms came in 1917 he was the first doctor from Durham to answer it. He was an excellent medical officer in the A.E.F. and was rapidly promoted from a first lieutenancy to a captaincy and finally was made a major and assistant

division surgeon in charge of Field Hospital 305 of the 77th (New York) Division.

During 1912, 1916, 1919, 1921, 1922, and 1926, he did post-graduate work in pediatrics at the children's hospitals in New York, Boston, St. Louis and Iowa City, and also in obstetrics in the New York Lying-In Hospital. From 1920, his major interest was in the care of children and for the last ten years of his life he limited his work entirely to pediatrics.

In 1920 he started what might be called his great work and with the coöperation of the Board of Health established feeding clinics for infants. Although criticized at first by some of the members of the local profession, he handled these clinics so unselfishly that he merited universal praise. These clinics probably have been the greatest single factor in lowering the infant death rate in Durham City and County. He gave his time unstintingly and freely to this work, neither asking nor receiving pecuniary recompense.

He also was greatly interested in the work of the Lincoln Hospital and as chairman of the consulting staff greatly helped that institution. His work for the colored race was greatly aided by Mrs. Brooks, who was active as a member of the Inter-Racial Committee. Her death on March 8, 1934, was a severe blow to him.

Dr. Brooks was vice-president of the North Carolina Pediatric Society and a member of the Medical Society of the State of North Carolina, the American Medical Association, the Southern Medical Association, and the Durham-Orange Medical Society, of which he had been president. He participated actively in the discussions of these societies and contributed several papers on pediatric subjects. He was also an examiner in pediatrics of the Durham Board of the National Board of Medical Examiners. On June 15, 1935, he received the certificate of the American Board of Pediatrics.

He always had the highest of ideals and stood for the best things in the practice of medicine. He died on August 24, 1935, at the age of 54 years and was buried at Nashville, North Carolina, near his old home. His life and work always will be an inspiration to his associates.

Dr. W. R. Stanford, *Chairman,*
Dr. W. C. Davison,
Dr. W. B. McCutcheon.

DR. ALEXANDER McNIEL BLAIR

Dr. Alexander McNiel Blair was born in Buffalo, N. Y., July 30, 1873, and died at his home in Southern Pines, N. C., November 27, 1935.

Receiving his early education in the public schools of Buffalo and Niagara University, he graduated from the Medical Department of the University of Niagara in 1897. He settled in Southern Pines, N. C., in 1903, where he was actively engaged in practice save for the summer

months, which he spent in Bethlehem, N. H., also in active work. His post-graduate work was done at Harvard University, Polyclinic Post-graduate Hospital in Philadelphia, Children's Hospital in Boston, and the Royal Victoria Hospital in Montreal. He was a member of the Volunteer Medical Service of the staff of the Lee County Hospital, Sanford, N. C. He became a Fellow of the American College of Physicians in 1925, and in addition held membership in the Moore County Medical Society of which he was president; the N. C. State Medical Society; the Tri-State Medical Society; and the Southern Medical Association, as well as being a Fellow of the American College of Radiology.

Dr. Blair was actively interested in social and civic matters in his community, was a director in the Citizens Bank & Trust Co., and a member of the Presbyterian Church. His chief medical interests were diseases of the chest and stomach, though his work was not entirely limited to these phases of internal medicine. At the time of his death, he was the oldest practitioner in service in Southern Pines.

C. H. Cocke, M.D., F.A.C.P.,
Governor for North Carolina.

DR. WILLIAM G. FRANCIS

Dr. William Gifford Francis was born near Waynesville, N. C., Nov. 17, 1887, and died rather suddenly of a heart attack at his country lodge on May 18, 1935.

Dr. Francis was graduated from the Waynesville High School in 1908, and later attended the University of North Carolina. After finishing his academic work, he took the two years medical course there, then went to Jefferson Medical College, where he graduated in 1915. He was licensed in North Carolina in 1916, and in Pennsylvania in 1917. He was married Nov. 3, 1917, to Miss Mary Doan, of Pennsylvania, who, with one daughter, survives him.

Dr. Francis was commissioned a First Lieutenant in the United States Army in August 1917, and was promoted to Captain in March 1919. He served one year overseas, and was mustered out of service June 30, 1919.

After leaving the army the doctor located at Coatesville, Pa., and practiced there until 1924, then returned to Waynesville, where he was engaged in general practice until the time of his death.

Dr. Francis was noted for his kind and gentle manner, and was always affable and considerate in his attitude toward his fellow man. Those without means, or hopes of being able to pay, did not hesitate to call him, for they knew they would not be denied, and the throng that attended his funeral was evidence of the esteem in which this splendid physician, and big-hearted man, was held by the people among whom he had lived and worked.

J. R. McCracken.

IN MEMORIAM

WILLIAM R. GOLEY, M.D.

Dr. Goley died on Nov. 12, 1935, at the Brunswick County Hospital, the cause of his death being acute edema of larynax, secondary to quinsy, and chronic myocarditis.

For more than two decades the health and sanitation of a large part of the country surrounding the thriving little community of Shallotte, Brunswick County, was vested in Dr. William R. Goley. Entering practice at this place in 1906, he built up a large professional business in general medicine and surgery, and won the confidence as well as the patronage of the people of his adopted locality. He also was the proprietor of a modern drug store, a necessary commercial adjunct, took an active part in all matters pertaining to civic welfare and advancement.

Dr. Goley was born on a farm in Randolph County, North Carolina, October 19, 1877, a son of Carson and Martha Evelyn (Kinney) Goley. The family was founded in this county by Dr. Goley's great-grandfather, who immigrated from Ireland and settled in Randolph County. There was born the grandfather of Dr. Goley, Ruffin Goley, who followed agricultural pursuits until enlisting in the Confederate army during the War Between the States, and met a soldier's death on the battlefield during the last year of the war. Carson Goley also passed his entire life in the cultivation of the soil, being the owner of a farm in Randolph County.

After acquiring his preliminary education in the public schools of his native community, William R. Goley took a two-year course leading to medicine at the University of North Carolina, and in 1900 entered the University College of Medicine, Richmond, Virginia, from which he was graduated in 1903 with the degree of Doctor of Medicine. He entered upon the practice of his profession at Durham, but after a short stay he removed to Brunswick County and opened an office at Supply, which town he made his place of residence for about two years. In 1906 he settled at Shallotte, which became his permanent home and the scene of his professional business and personal success. His practice covered many miles surrounding Shallotte, and the doctor was never too busy to visit a patient, no matter how far the distance or how inclement the weather. Possessing a sincere love for his fellow-man, he was at all times ready to subordinate his own interest to those of suffering humanity, exemplifying in the highest degree the best ethics of his profession and a recognition of its obligations and responsibilities. He belonged to several organizations of his profession and kept fully abreast of its numerous discoveries and advancements. In 1913 Dr. Goley opened a modern drug store, which filled a long-felt want, and is still the only one in the Shallotte locality. He carried an up-to-date line of drugs and sundries and had a large patronage. In addition the genial doctor had valuable farming interests in Brunswick County. He was a member of the Masons, the Woodmen of the World and the Junior Order United American Mechanics, and no movement for civic better-

ment or advancement was considered complete that did not include his name on its list of supporters.

In 1906, at Shallotte, Dr. Goley was united in marriage with Miss Lula White, a native of Brunswick County, daughter of A. S. and Ellie (Harnett) White. Mrs. Goley died at her home at Shallotte, March, 1923.

(Copied from History of North Carolina)

Dr. Goley was a trustee of the Shallotte Camp Methodist Church but wasn't member of any church. He was born in Julian, North Carolina. (Randolph County).

Whereas it hath pleased Almighty God, in His All-Wise providence, to remove from the sphere of his earthly activities (on Nov. 12, 1935) our friend and fellow practitioner, William R. Goley, and whereas we feel sure that the memory of his faithful service to his fellow-men and his loyal coöperation with the members of his profession will always be cherished by the community in which he lived and by the Medical Society of the State of North Carolina.

Be it resolved:

That the third district of the State Medical Society go on record as paying warm tribute to Dr. Goley as a man and to his professional skill and untiring devotion to duty, and

Be it further resolved:

That a copy of these resolutions be sent to the members of Dr. Goley's family, to the press and to the secretary of the Medical Society of the State of North Carolina and that they be inscribed upon the permanent records of the Third District Medical Society.

Committee:
William S. Dosher, M.D., *Chairman,*
John T. Hoggard, M.D.,
John B. Cranmer, M.D.

DR. S. M. HENDERSON

Born January 13, 1869 Died April 13, 1935

By Dr. J. R. Alexander, Charlotte

Dr. Simril McDowell Henderson was born in the old Henderson Home at Alexandriana (now Croft) on January 13, 1869, and passed away on April 13, 1935. He was a son of the late Dr. Joseph McKnitt Henderson and his mother was before her marriage Miss Leonora Simril of York, South Carolina. On his paternal side he was a great-great-grandson of John McKnitt Alexander and Major John Davidson, both of Revolutionary fame.

His college preparatory work was done at Old Hopewell Academy and Alexandriana. From there he went to Davidson College. He received his medical training at the University of Maryland, graduating in 1894.

In 1908 he married Miss Pearl McArtan of Harnett County, who with two daughters survive him.

He practiced in Mecklenburg County for about twenty-five years and then moved to Charlotte. He was president of the Mecklenburg County Medical Society in 1928.

His church activities were many. In his old home church, Sugar Creek, he was an elder for a number of years, and later an elder in Caldwell Memorial, but the thing that gave him most joy was the studying and teaching of the Scriptures.

Dr. Henderson belonged to the honored class of physicians fast becoming extinct, the "old family physician." These qualifications were largely inherited from his father and also acquired from the great men of his alma mater, the University of Maryland, notably Julian J. Chisholm, Francis F. Miles, Samuel C. Chew, William T. Howard, I. F. Atkinson, Louis McLean Tiffany, and others. This very able faculty instilled in the minds of their pupils the highest principles and responsibilities of a physician. Dr. Henderson cultivated and practiced these high principles during the forty years that he practiced his chosen profession.

OBITUARY OF DR. PARRAN JARBOE

In the early morning hours of the 29th of December, 1935, Dr. Parran Jarboe, our worthy and esteemed fellow laborer, passed away as a result of an automobile accident which had taken place only a few hours before. From this accident, which left his body badly crushed, and his mind, so given to clear thinking and sound judgment in the mastery of the art of surgery and medical treatment, in a state of bewilderment and confusion, he never rallied. Yet, in this state of body and mind, he reasoned with accuracy and precision as to the matters which had transpired a few days previous to the fatal tragedy.

On the day of the accident, Dr. Jarboe had visited with his only child, Mrs. W. A. Devin, Jr., of Hickory, North Carolina. From her home he had proceeded to Asheville, North Carolina, and was returning from there when, just out of Shelby, his car, driven by himself, skidded on the paved highway made slick by ice and snow, leaving Dr. Jarboe in a helpless and critical condition. After his untimely and almost sudden passing, his body was taken to Belmont Abbey and, after appropriate funeral services, was interred in the cemetery at Belmont, North Carolina. His body was placed beside that of his wife, Lucile Glenn Peyton Jarboe, who had predeceased him on October 4, 1934.

The boyhood days of Dr. Jarboe were lived in the State of Maryland, he having been born in St. Mary's, Maryland, and it was here that he developed and grew to young manhood. He was the son of the late Joseph Benedict and Mary Hazel Jarboe. His education leading to his medical training and practice was acquired at St. Thomas Academy and at Loyola College, Baltimore, Maryland, he having been a graduate of the latter

named institution. He was graduated from Georgetown University, having received his M.D. degree from there in the year 1905. The practice of medicine here in Greensboro was enriched by his entrance into same in 1906. On December 7, 1907, Dr. Jarboe was married to Miss Lucile Glenn Peyton, of Washington, D. C., and to this union one daughter, Margaret Jarboe, was born. Dr. Jarboe was a devoted husband and father.

For a great number of years he was associated with the late Dr. J. Wesley Long, of this city, a surgeon renowned throughout the Southland and other sections of this country. By reason of his assistance to and his work in surgery, under Dr. Long, Dr. Jarboe received the praise of this eminent surgeon as well as his confidence in his ability as a surgeon in his own right.

Our lamented brother was chief surgeon at St. Leo's Hospital, at the time of his death, as well as a member of the staff of the Sternberger Children's Hospital, the Clinic, and the Richardson Memorial Hospital. In further service to his community and country, he was major in the Officers Reserve Corps, active commanding officer, Medical Department, Detachment 252, Coast Artillery.

He was a member of the Guilford County Medical Society, having served as its secretary and treasurer from 1917 to 1921; the North Carolina State, the Tri-State, the Southern Medical and the American Medical Associations, and a Fellow of the American College of Surgeons. He likewise enjoyed the fellowship of his friends and neighbors, by being a member of the Phi Chi National Fraternity, the Kiwanis Club, the Greensboro Country Club, the Sedgefield Country Club, and the Merchants and Manufacturers Club. He was a devoted member of the Catholic Church, having his membership in St. Benedict's Church of this city.

Dr. Jarboe specialized in surgery from 1916 until the time of his death. He was not only an eminent surgeon by reason of his skill and ability, but he was recognized as an able diagnostician. In his diagnosis, operation and treatment he was painstaking and thorough. The success which he attained in his chosen profession was such that anyone pursuing this great calling in life might justly be proud. On the human side of his busy professional life, he was universally liked. He was always cheerful in the presence of his patients, always wearing the smile that means so much in the sick room, and which is so greatly missed by all of us. He always spoke in a subdued tone, and yet his voice carried with it the gentle and kind assurance to the suffering one under his care, that he or she "Would soon be out and well again." Truly, patients who have regained their good health under his skilled hands and trained brain, and who learned to love him as their friend and doctor, have sighed already for the cheery smile and the stilled quiet voice. Our friend walked among us in an absolute spirit of humility. He was kind, gentle and sympathetic, not only with his patients, but such was his character among his fellow practitioners and surgeons. His quiet unassuming and unpretentious manner won for him a host of loyal friends. There were no trumpets to herald his coming and going;

there was no ostentation, and he did not care for praise. As a matter of fact, to praise him was to embarrass him. Well may we who are left to carry on, emulate such a spirit as he exemplified toward his fellow man. It was just such a spirit that would not let him speak critically or disparagingly of his professional brothers, and it was such a spirit that has caused us to feel so keenly his passing.

"Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea,

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep,
Turns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell
When I embark;

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face,
When I have crost the bar."

By W. C. Ashworth, M.D.

DR. ROBERT BENJAMIN KILLIAN

He was born on a farm in Catawba County on September 12, 1858. After graduating from Concordia College at Conover, he taught school for four years in Catawba and Lincoln County. Then he read medicine with Dr. Ellis and Lafayette Abernethy in Hickory.

In 1885 he graduated from the Medical College of the University of Louisville in Kentucky. After graduation in medicine, he located at Taylorsville, N. C.

In 1887 Dr. Killian went to New York and was one of the first students to enter the newly opened Post-Graduate School of Medicine. He witnessed the first operation for appendicitis which was performed in New York. At that time, he equipped himself for surgery. When he returned to Taylorsville, after his post-graduate course, he began performing operations in the homes of his patients. On January 17, 1896, Dr. Killian removed a badly inflamed appendix from 16-year-old Ransom Sharpe of Hiddenite. This was the first operation for appendicitis done in North Carolina in which the patient recovered. Dr. Killian later named his son Ransom, after the given name of the first appendectomy case.

In 1892 Dr. Killian was married to Miss Ella Rhodes. To this union two children were born, Ransom and Mary.

During his long career in the practice of medicine, he came in contact with people in all walks of life and was loved by his neighbors and acquaintances. During the last ten years of his life, he retired from the practice of medicine and devoted his time to the supervision of his large farming interests.

Yours very truly,
L. A. Crowell, Jr.,
Secretary-Treasurer, Lincoln County Medical Society.

DR. A. W. KNOX PASSES HERE

Death Closes Long Service to Suffering; Well-Known Physician, Surgeon Dies After Long Illness

Dr. A. W. Knox, 87, prominent physician and surgeon of Raleigh who practiced his profession here for more than 50 years, died at noon Saturday, May 9, 1936, after an illness of several years.

He died at the home of his daughter, Mrs. Roy Chipley, on 311 Whitaker Mill Road.

As the oldest living physician here at the time of his passing, he was dean of the Wake County medical group. For years he had been a leading member of the Raleigh Academy of Medicine and Wake County Medical Society, and was affiliated for a long time with outstanding medical organizations in the State and nation.

Dr. Knox retired from practice in 1927 and at that time was given a loving cup by the Raleigh Academy of Medicine. He was stricken with paralysis about four years ago.

Dr. Knox was graduated from Bellevue Medical College of New York City, in 1874 and served as interne at Bellevue and Woman's College hospitals in New York for four years.

He was licensed to practice his profession in North Carolina in 1878, and located in Raleigh later.

After starting his practice here, Dr. Knox was professor of surgery at the Leonard Medical College of Shaw University from 1886 to 1912, and also was a member of the faculty of the Medical School of the University of North Carolina when it was located in Raleigh.

He was president of the State Medical Society in 1903, and was a member of the North Carolina Board of Medical Examiners for six years from 1884.

For many years Dr. Knox was a member of the Board of Trustees of Rex Hospital here.

Surviving are his widow, four daughters, and two sons: Mrs. R. Y. Winters and Mrs. Roy Chipley, of Raleigh, Mrs. Paul Nicholson of Port Washington, L. I., Mrs. George Fry of New York City, A. W. Knox, Jr., of New York City and John S. Knox of Raleigh.

Funeral arrangements will be announced later.

ADD: NOBLEST WORK

Dr. A. W. Knox, of Raleigh, dead at 87, spent 50 years as general practitioner, surgeon and diagnostician.

Half a century devoted to an honest attempt to heal. It was a great life and the liver thereof never weakened. When he reached 79 or 80 he retired, three-four years later was stricken by paralysis and, of course, died apart from his stethoscope, CC pills, calomel and Dover's powders; whether his spirit goes marching on we know not, but his memory is an oasis with great, umbrageous palmtrees and a plethora of cool wells to those who lived, moved and had their being alongside him.

I swam into Dr. Knox's ken first as a possible candidate for military honors. That is to say, as a married man, reputedly head of a family and classified 4-A, I was sent to him for examination. This was done as rigorously as if I had been weighing in for a prize-fight or being tested for the football squad. There was nothing perfunctory about Dr. Knox's examinations; he stripped you, thumped you, as if it were the last job he expected to undertake.

If I didn't whip a cowpenful of the Germans, it was not Dr. Knox's fault.

A year or so after that I was sent before Dr. Knox as examiner for the Jefferson Standard Life Insurance Company. The same care was used in thumping, stripping and weighing and added thereunto was a test of blood pressure and some questions as to habits.

"How much alcohol do you drink?" asked Dr. Knox.

"Well," I returned, "I'm being examined for life insurance now, and of course am on the wagon. I haven't seen a drink in weeks."

"But you take one now and then?"

"Yes, if the company and the liquor are worth it; but honest, Doctor, I don't indulge just because it is free; I've got to be sick or want it, or with somebody or by myself."

"Well," said he, "I used to like a bottle of beer before prohibition. I doubt if I ever will get a chance at beer again, but I want to feel free if there is a chance. What I answer with regard to alcoholic indulgences is 'about a gill a month'; would that suit you?"

"Better make it Fred Fetter's 'an occasional drink,' " I returned. "I might get out over my depth on a fishing party or something and couple up two-three-months' allowance in one night."

And that was that. Tough going while he was about it; but you felt as if you had received an accolade when your application for insurance went through with Dr. Knox's approval.

Never having carried to him a neurosis, frustration or other Freudian what-have-you, I do not know what, if anything, Dr. Knox knew or practiced of psycho-analysis, but fancy he was lacking in some of the latter-day striving for psychiatric effect. He struck one as rather running to calomel to clean a liver and to cauterization for the removal of proud flesh.

But fifty years of dogged persistence in honest ministration to his neighbor's ailments! A life of service can be lived at Raleigh without holding or running for office. For that matter I do not recall that Dr. Knox ever joined a civic club.—O. C. in *Greensboro News.*

DR. H. S. LOTT

By Dr. E. F. Strickland

"Day by day the number lessens,
Year by year they slip away
To the unknown land far-distant
In the realms of endless day."

In the passing of Dr. H. S. Lott in Winston-Salem on March 28, 1936, I lost a true friend and the medical profession a substantial member.

Dr. Lott had practiced his profession in his home town for fifty years and reached the age of 75.

A native of Winston-Salem, he was born July 15, 1860, educated in the public schools of this city and was graduated from the Augusta Medical College, Augusta, Ga. After doing general practice for a number of years his aptitude inclined him to specialize in surgery. He took long courses of study and training in the centers; spending one year at the Mayo clinic, Rochester, Minn., graduating from the Polyclinic of New York, and associating himself with Dr. Joseph Price at his hospital in Philadelphia for one year. He returned to Winston-Salem, for the practice of his specialty, where his skill and ability won for him a broad and well-merited reputation in surgery. Dr. Lott had the two-fold ability to think and express himself clearly. He was dignified and logical in speech and wrote with ease and grace.

His contributions to various medical publications gave his talents wide recognition, and won for him membership in the American Medical Editors' and Authors' Association; also membership in the American Association of Obstetrics and Gynecology. His invention, Lott's uterine dilator, was favorably accepted by many of the profession.

Dr. Lott was a member and former president of the Forsyth County Medical Society, member of the North Carolina Medical Society and the American Medical Association. Under appointment he served as the pioneer Councillor for this, the 8th District Medical Society, traveling with horse and huggy (it being before the time of automobiles) at his own expense, time and effort, and thus establishing the organization which is still in successful effect. Neither financial gain nor political preferment were sought in the discharge of duty, in his long professional life, but a clean ethical career for the relief of humanity, for the sake of science and for the advancement of his noble profession were his goal.

On November 1, 1887, Dr. Lott was married to Miss Dorcas Adams, of Augusta, Ga. Mrs. Lott, three daughters and one son survive him.

Dr. Lott was a member of the First Presbyterian Church and Dr. D. Clay Lilly, for many years his beloved pastor, conducted the funeral services at his home on Stratford Road on March 30, 1936. Interment was in the Salem Cemetery.

IN MEMORIAM—DR. WILLIAM DOUGALD MacMILLAN

Dr. William Dougald MacMillan, honorary fellow of the Medical Society of the State of North Carolina, honorary member of the Third District Medical Society, and honorary member of the New Hanover County Medical Society, passed away peacefully on Tuesday, November 12, 1935, at the home of his son, William Dougald MacMillan, Jr., in Wilmington, North Carolina.

Dr. MacMillan was ninety-one years old, having been born on the family plantation, Sloop Point, in Pender County, North Carolina, then New Hanover County, on August 11, 1844. He was the son of the late Dougald MacMillan and Mary Ann Louisa Wright, his wife. The greater part of his boyhood was spent in Wilmington where he was a student at McGinness Academy. Later on he attended Shook Military Academy at Madison, North Carolina.

In 1861 he left this school to join the Confederate Army, first enlisting in Rankin's Battery, Light Artillery. He was soon transferred to the 51st Regiment in which he served with distinction until the close of the war. He was promoted to Sergeant Major, and afterwards served as Adjutant, being given "special detail" under Colonel McKeithan, commander of the regiment. He was twice wounded, at Cold Harbor and at Fort Harrison.

After an honorable discharge at the end of the War Between the States, Dr. MacMillan studied medicine at the University of Maryland, graduating from that institution with the degree of M.D. in 1869. Two years were spent at Sloop Point with his father, and then he located at Sugar Maple, in Onslow County, where he practiced medicine until 1880 when he removed to Magnolia, Duplin County, practicing there over a large territory. While in this location he was Division Surgeon of the Atlantic Coast Line Railroad Company. In 1869 Dr. MacMillan was married to Miss Margaret Anderson of Fayetteville who died in 1923.

Dr. MacMillan came to Wilmington in 1893 where he continued the practice of medicine successfully for many years, making an enviable reputation for himself as a physician as well as a warm place in the hearts of the people. He retired from active work in 1913. For a number of years he was the Superintendent of Health of New Hanover County and he was the first Health Officer of the consolidated Boards of Health of New Hanover County and of the City of Wilmington. During this term of service he gained a deservedly wide reputation for his diagnosis and treatment of preventable disease.

Dr. MacMillan was a devout member of the Episcopal Church, and he also attained high degree in Masonry, being past master of Orient Lodge,

past eminent commander Plantagenet Commandery Knights Templar, and past district deputy grand master.

After his retirement from active practice and the strenuous duties of Health Officer, Dr. MacMillan spent part of his time in Wilmington with his son, W. D. MacMillan, Jr., and a part in Brunswick County with his daughter, Mrs. W. J. Martin. For the last several years of his life, he lived at his beloved "Sloop Point" in the two-hundred-year-old house in which he was born. Surrounded by the things he loved he lived peacefully with his other two daughters, Misses Eleanor and Joanna MacMillan, watching the growing crops, reading his favorite books and papers, and receiving with gracious hospitality the frequent visits of his many friends.

To this large circle of friends, Dr. MacMillan's memory will always be a tender gracious recollection of a life well rounded and well spent in honest loving service, and his professional career will ever be an inspiration to those of us who have known and loved him through the years.

"The spirit of this man is still alive,
A man who fought his battles unafraid,
This was his goal—to serve his fellowman
Sustained in all he did through faith in God."

RESOLUTIONS OF RESPECT

Whereas it hath pleased Almighty God to call unto Himself in that larger life beyond the grave the soul of our deceased brother, William Dougald MacMillan, beloved physician, loyal colleague, and faithful friend, and

Whereas the removal of this our friend and brother from the sphere of his earthly activities leaves a distinct sense of sorrow and loss to those of us who are left behind.

Be it resolved; that we, fellow members of the medical societies in which William Dougald MacMillan served as an active member for many years and for the past thirty-three years a valued honorary member, desire to give this fitting expression of our appreciation of his high character and sterling worth, and of his long and useful life; and

Be it further resolved; that these resolutions of respect be inscribed upon the permanent records of our societies; that a copy be sent to the family and to the press.

Committee:
John T. Hoggard, Ernest Bulluck,
John B. Cranmer, *Chairman.*

DR. THOMAS M. MEISENHEIMER

Born March 23, 1897 — Died January 4, 1935

By Dr. J. P. Matheson, Charlotte

Although it is with a feeling of sadness, it gives me genuine satisfaction to record in retrospect a few thoughts relative to Dr. Thomas M. Meisenheimer, recently deceased.

He was affectionately known to all of us as "Tom." I first knew him as a likable small boy of six or seven years. At that time I was associated with his father, the late Dr. C. A. Meisenheimer.

I think I may here, pertinently and appropriately, pause long enough to pay tribute to his father also. He was a pioneer in Charlotte medicine which was then in its crude beginnings. He possessed and used the first microscope brought here. His initiative and courage carried him as a path-breaker into new fields of surgery. He was not the pioneer, however, for he was ever at the call of his patients with a kindly, sympathetic understanding. He was never too busy either to manifest a paternal and stimulating interest in younger men such as myself. Indeed it was he who gave me an entree into Charlotte medicine, even to the extent of sharing his office with me in those needy and uncertain days.

Naturally, such a background turned the attention of his son, Tom, to the study of medicine. Following his graduation from the Charlotte High School, he entered Davidson College from which he was graduated in 1918 with a B.S. degree. He served in the R.O.T.C. medical unit at Harvard University during the World War. He later matriculated at the Medical College of the State of South Carolina and was graduated from this institution in 1925 after which his interneship was served at Roper Hospital in Charleston. In 1926 he returned to Charlotte to be associated with his father. This association was a great boon to Dr. Meisenheimer in his declining years.

Tom reflected that ineffable charm of his father. His friendly, sincere interest in people drew to him friends everywhere, professional and lay alike.

Thus he was peculiarly fitted for the role of general practitioner. No hour was too late, no patient too lowly, no skin too dark to receive his cheerful, solicitous efforts.

He was conscientious always. This deep interest in his patients was one of his finest attributes. If special care was indicated, Tom got it for his patient regardless of his financial circumstances. In fact, he was at times almost apologetic to his colleagues for supposedly bothering them.

He assumed no profundity of knowledge. His was kindliness and humility almost to a fault. His ever-present smile reflected his joy in living.

That such a traveler along life's highway should be prematurely stricken, deprived us of a stimulating fellowship. As a physician he knew the unalterable verdict of his malady. Even so, he met that verdict as he lived—uncomplainingly and with cheerful fortitude.

I believe that his philosophy of life may be summed up in these lines, the author of which I do not know: "May the love of my art actuate me at all times. May neither avarice nor greed nor the thirst for glory engage my mind; for the enemies of truth and philosophy could easily deceive me and make me forgetful of my lofty aim of doing good for Thy children."

IN MEMORIAM—DR. CHARLES H. C. MILLS

CHARLOTTE, N. C.

By BRODIE C. NALLE, M.D., Charlotte

Dr. Mills was born at Onancock, Virginia, September 5, 1868. He received his education at Western Maryland College and at the University of Maryland. While at the latter institution he served at one time as president of the Rush Club (Medical Society). Before getting his medical education he received degrees in pharmacy and chemistry. During his last year of medicine he held the obstetrical chair at the University of Maryland while his professor studied abroad.

In 1901 Dr. Mills came to Charlotte, North Carolina to practice, and in 1908 he took up post-graduate work in obstetrics in New York City and was the first doctor in Charlotte to specialize in obstetrics.

In 1906 he married Miss Elizabeth W. Lamb of Williamston, North Carolina.

During the World War he volunteered his services and was enrolled in the Volunteer Medical Service Corps.

He taught obstetrics in the North Carolina Medical College, in Charlotte, North Carolina, until the College was transferred to Richmond, Virginia. For many years he instructed the nurses at St. Peter's Hospital and at the Mercy Hospital.

He was a member of the American College of Surgeons.

He was the Dean of Obstetricians in Charlotte where he had the practice of the best people in the community, whose respect and confidence he gained and held. Physically strong until his last illness, he was untiring in his efforts for his patients. He had the most sympathetic and gentle demeanor in the delivery room, with a refinement and gentility which only come of heritage. He had a retiring nature, always frank and honest, with no semblance of pretense. Among the profession he was held in high esteem and regarded as a most capable obstetrician.

He has left with us a record of unselfish endeavor for the advancement of medicine. With him, on that last journey, goes the love and esteem of many friends and the medical profession. His daily life has left an unfading memory of a forceful personality that lent dignity and distinction to the practice of medicine. His daily work expressed the high ideals of our profession. To me he was a true friend, and was my consultant and consoler on many occasions.

He died March 5, 1936, and is survived by his widow and five children.

It must be that the Great Physician whose footsteps he faithfully followed will bless him and care for his loved ones.

DR. WALTER BYRD POLLARD

Winton.—Funeral services for Dr. Walter Byrd Pollard, 61, prominent physician of Winton, N. C., who died at his home there Saturday night of a heart attack, were conducted at the Winton Methodist Church Monday.

The Rev. E. W. Downum, pastor of the church, the Rev. J. Leon Malone, rector of St. John's Episcopal Church, and the Rev. J. N. Gyrum, of Roanoke Rapids, officiated at the rites.

Dr. Pollard had held many offices in his county, among them county health officer and road commissioner. He was a member of the medical examining board during the World War and volunteered for medical service overseas. He was a member of the American Medical Association, Seaboard Medical Society, Tri-State Medical Society, the Medical Society of the State of North Carolina, and had been president of the Hertford County Medical Society for several years. He was warden of St. John's Episcopal Church, Winton, and a member of Winton Lodge 327, A. F. and A. M., the Chapter and Scottish Rite bodies; and Sudan Temple, Shrine, of New Bern.

Dr. Pollard was the son of the late Byrd George and Mrs. Emma Fisher Pollard, and in addition to his wife, Mrs. Janie Brown Pollard, is survived by one son, Walter Byrd Pollard, Jr., student at State College, Raleigh; one sister, Miss Cora Pollard, and a half brother, C. Woodson Pollard, both of Norfolk, and several nieces and nephews.

DR. FREDERICK L. POTTS

By DeWitt Kluttz, M.D., Washington, N. C.

The history of the medical profession of Craven County teems with the names of men of science, self-sacrificing and efficient, whose lives were devoted to the healing of the sick and the improvement of sanitary conditions. Among them is that of Dr. Frederick Latham Potts.

Frederick Potts was born at Washington, Beaufort County, North Carolina, December 10, 1873, a son of William A. and Josephine Latham Potts. He attended private schools at Washington, N. C., and Scranton, Pa. Later he studied at the University of Georgia and the Medico-Chirurgical College of Philadelphia; the latter having since been consolidated with the University of Pennsylvania. He was graduated therefrom in 1899 with the degree of Doctor of Medicine.

Prior to his graduation, in 1898, he began the practice of medicine at Vanceboro, N. C., where he remained until 1900, when he went to Spartanburg, S. C., where he operated a hospital and practiced surgery exclusively until 1916. He then returned to Vanceboro, N. C., and carried on a general practice until his death, March 23, 1935.

Dr. Potts was a Presbyterian, a member of Morgan Lodge, A. F. and A. M., of Spartanburg; New Bern Chapter No. 46, R. A. M.; Saint John's

Commandery No. 10, K. T., of New Bern; and Sudan Temple, A. A. O. N. M. S., of New Bern. At his death he was a member of the Craven County Medical Society, the Medical Society of the State of North Carolina, the American, and the Tri-State Medical Associations.

Dr. Potts is survived by his wife, the former Miss Lucy White, one daughter, Mrs. Charles Lea, Jr., and one granddaughter. Also surviving him are a brother, Rev. John R. Potts, of Greenville, N. C., and a sister, Mrs. Ida Kugler, of Philadelphia, Pa.

DR. T. C. QUICKEL (Honorary Fellow)

Prominent Gastonia Ear, Eye, Nose, and Throat Specialist Was Lincoln Native

Gastonia, April 28—Dr. Thomas C. Quickel, prominent Gastonia physician and specialist for many years, died at his home on South street here at 6:45 o'clock this morning after a long illness.

Death came to Dr. Quickel on his sixtieth birthday anniversary. Some five years ago he suffered a serious infection of his hand, from which he never fully recovered, although he continued to practice until about two years ago. In recent months he had been suffering from a complication of diseases, and had been in a critical condition for several weeks.

Funeral services will be held at 3 o'clock Thursday afternoon at Holy Trinity Lutheran Church. Interment will be in Hollywood cemetery.

Thomas Crouse Quickel was born in Lincoln County, a son of the late John C. and Nancy Josephine Crouse Quickel. He attended the public schools in Lincolnton, and later attended Lenoir College in Hickory and the University of North Carolina. He was graduated from the medical school of Tulane University, New Orleans, in 1900, and returned to his native state for the practice of medicine, locating at Kings Mountain and later practicing at Stanley, this county.

Later Dr. Quickel went to New York where he took a special course in eye, ear, nose, and throat, after which he located in Gastonia, where he had been practicing for the last 27 years.

On June 18, 1902, Dr. Quickel was married to Miss Addie Guy, who survives, along with two sons, Thomas Quickel of Jamestown, N. Y., and Dr. John C. Quickel, an eye, ear, nose, and throat specialist, who for the last two years has been associated with his father here; and the following brothers and sisters: W. C. Quickel of Los Angeles, Calif.; A. L. and J. A. Quickel of Lincolnton; A. F. Quickel of Macon, Ga.; H. A. Quickel of Sarasota, Fla.; and Mrs. Carl B. Rehder of Wilmington.

Dr. Quickel was a member of the North Carolina Medical Society, the Gaston County Medical Society, and the Rotary Club.

DR. J. H. SHUFORD

Hickory, N. C.

By Jas M. Northington, M.D., Charlotte

Mr. President and Gentlemen: Dr. Shuford was one of the most lovable men I ever knew. I knew him in civil life, and I knew him in military life, and I have never known a man who more completely measured up to the full stature of a man. He was a lad in Hickory, and when he was moved to enter upon the study of medicine he was induced by a pharmacist in that then village to go to the far-away University of Michigan. There he came under the influence of Dr. Victor Vaughan and such other masters of the art and science of medicine, and they gave his professional life its directing force. When the War came on he closed his office and his hospital and he went out, as so many of us did, to contribute his bit toward doing what was called at the time—and we really thought it was—fighting to make the world a safe place to live in. Now, that was not accomplished, as all of us can realize, but that does not detract from the motive. He came back from the War broken in health and much broken in spirit, and just a few weeks ago I stood beside his grave and heard and saw the final salute to the dead and this good man and this excellent doctor returned to the earth from which he came.

DR. J. H. SHUFORD

By A. C. McCall, M.D., Asheville

I should like to say just a few words in regard to Dr. Shuford. I met Dr. Shuford in the Service. We were in France together for many months, and I learned to know him very well. He was a friend to us all, and we all learned to love him. He returned to this country before some of us did. When all of us came back we made it a point to look up Dr. Shuford, and I kept in contact with him in his home in Hickory after the War; although I did not see him very often, we often sent each other messages. He was beloved by the entire battalion. The personnel looked upon him as their friend; the officers of the organization looked upon him as their friend. We felt that we could talk to him about anything, personal or professional, and receive sympathetic hearing. When he lost his health and came to Asheville seeking relief I had the pleasure of calling upon him several times. Each time he would smile the old smile, just as he did in Army days, and say: "I shall be all right"; and he never gave up until the last few days of his life. I feel that in Dr. Shuford's death not only have I lost a very dear friend but the medical profession of North Carolina has lost a very fine member. If we strive to emulate him we shall do credit to ourselves. I feel that anything we might say about him would fall far short of describing the man as he was.

DR. A. OGBURN SPOON PASSES AT HOSPITAL

Prominent Physician and Citizen Succumbs to Influenza and Pneumonia

By W. C. Ashworth

Dr. Arthur Ogburn Spoon, 54, of 1908 North Elm Street, long prominent as a physician and citizen of Greensboro, died about 9:30 o'clock Tuesday night, December 10, 1935, at Wesley Long Hospital, in which he had been a patient since November 19th.

Death was due to a virulent form of influenza and pneumonia which Dr. Spoon contracted because of exhaustion from weeks of effort to restore to haelth an entire family stricken with the same form of infection. From the beginning of his illness his fellow-physicians, recognizing the deadliness of the disease, used every medical agency to overcome it, a number of them working together incessantly throughout his illness. Heroic measures employed to fight the infection were successful until fatal complications developed.

The funeral was held at Buffalo Presbyterian Church.

Dr. Spoon was born November 19, 1881, a son of the late John Spoon and Emma Clapp Spoon, of Alamance County, and a grandson of John Spoon, Sr. His grandfather on the maternal side was a Coble, who, like John Spoon, Sr., was a pioneer settler, a successful farmer, and a community leader in his day. His early childhood was spent in Alamance County, including a period of residence at Haw River. He attended Buie's Creek Academy (now Campbell College), also Whitsett Institute, and completed the work for his B.S. degree at the University of North Carolina, receiving his M.D. at the University of Maryland.

Upon finishing medicine, Dr. Spoon became resident physician at Revolution Mills in 1908. He practiced there until 1918 when ill health made it necessary to leave his work for a year. He resumed his practice at Revolution in 1919, but his physical condition forced him to limit his work to such an extent that he resigned as mill physician at the end of 1920. He helped to organize and became part owner of the Smith Drug Company, located on Church Street extension, moving his office there; he had continued to retain his office at that location since that time.

In 1921 Dr. Spoon was compelled to spend a year in a sanatorium in the interest of his health, which he partially recovered, and until his illness about a month before his death, he continued to serve, in so far as his strength would permit, the people whom he loved.

Dr. Spoon was largely instrumental in the re-establishment of a drug store at McAdoo Heights, the present McAdoo Heights Drug Company, operated by Ralph J. Sykes, after the Smith Drug Company ceased to operate. He was a member of the Masonic Order, the Junior Order of United American Mechanics, the Guilford County Medical Society, and the North Carolina Medical Society.

In 1915 Dr. Spoon was married to Nancy Caffey, of High Point, who survives him. He also leaves a son, A. Ogburn Spoon, Jr., sophomore at Davidson College; his mother, Mrs. Emma Clapp Spoon, of Greensboro; a brother, S. C. Spoon, of Haw River; two sisters, Mrs. William Freshwater, of Haw River, and Mrs. P. V. Carter, of Greensboro; a niece, Mrs. Lorene Gant, of Haw River, and three nephews, Dr. S. C. Spoon, of Burlington, S. Baxter Stapleton, of Greensboro, and Harry Stapleton, of New York City.

Dr. Spoon was recognized as a man of fine principles and strict integrity. He was very modest and retiring in nature, never taking credit for his accomplishments but always appreciative of the achievements and character of other people. His sympathy and generosity were unfailing.

DR. HENRY T. POPE

By Thos. C. Johnson

On the morning of February 12, 1936, the citizens of Lumberton and Robeson County were profoundly shocked and deeply grieved in the passing of Dr. Henry T. Pope. The medical profession of North Carolina lost a true disciple of Aesculapius; the community and Church in which he so long and faithfully served, lost a friend, adviser and physician. Dr. Pope was born in Robeson County, North Carolina, near Lumberton, December 5, 1871, being the youngest son of Henry Theron Pope and Harriet Moore Pope. On June 16, 1896, he and Miss Sarah Johnson of Melton, Pa., were united in the holy bonds of wedlock; this union was blest with five children, Mesdames Sadie Ray Kennedy and R. A. McIntyre, of Lumberton, N. C., Theodore, of Albemarle, N. C., and Morris and William, of Lumberton, N. C.

During his boyhood and young manhood he attended the schools of Lumberton, Lumber Bridge and Warsaw, N. C. He graduated in medicine May 11, 1894, from the North Carolina Medical College at Davidson, N. C. He was licensed to practice medicine by the North Carolina Board of Medical Examiners, May 13, 1893, one year prior to his graduation. He did post-graduate work in 1896 at the Philadelphia Polyclinic, post-graduate work in the New York Post-graduate Medical School and Hospital, New York City, 1901, and again at the Philadelphia Polyclinic in 1907 and post-graduate lectures at the University of North Carolina.

He was largely instrumental in organizing the Robeson County Medical Society in 1903 and was elected President of the Society in 1903 and again in 1929, being the only physician to serve in this capacity twice in Robeson County. At the time of his death he was Chief of the Obstetrical Department of the Baker Sanatorium and taught obstetrics in this institution for fifteen years. He was a member of the medical staff of the

Thompson Memorial Hospital. He was a deacon in the First Baptist Church for more than thirty-six years, and a Mason.

He practiced medicine in the community in which he was born and reared and exploded the adage "That a prophet is not without honor save in his own country," for he was honored and greatly beloved by Robeson and the surrounding counties' three races—white, Indian, and colored. He did not content himself with being an ordinary physician, but kept abreast of the times and the newer trends in modern and scientific medicine by reading medical journals, scientific articles, doing post-graduate work and attending post-graduate lectures and by being a student of the human race and a close observer.

He was a man of indomitable courage and will-power. In 1908 he suffered a fracture at the base of the skull as a result of being thrown from a buggy by a runaway horse and in 1921 he was severely and seriously injured in a collision between his automobile and a train. Notwithstanding these injuries that left him a sufferer from severe headaches, he bore his pain uncomplainingly and continued his practice until one or two days prior to his death. While he did a large general practice his specialty was obstetrics, having officiated at more than 5,000 deliveries. He was ever ready to answer the call of suffering humanity, irrespective of their race, social standing, or their financial ability to pay. Truly he will be sadly missed by the citizens of this community and more especially by those in the humbler walks of life.

His passing is a heavy blow to the Robeson County Medical Society for his opinions were the happy medium or the balance wheel between ultra conservative and ultra radical problems in the Medical Profession.

A fitting eulogy of Dr. Pope's life may be summed up in the following few words: "He went about doing good."

DR. L. L. SIMMONS DIES

Had Been Ill Four Weeks; Prominent as Eye, Ear, Nose and Throat Specialist for 17 Years; Native of Tennessee

By W. C. Ashworth

Dr. Lawson Lee Simmons, for many years a prominent eye, ear, nose and throat specialist of this city, died last night about 9 o'clock at Wesley Long Hospital after an illness of four weeks with a complication of diseases.

The deceased had been in declining health for the past few months, and he and Mrs. Simmons had given up housekeeping at their home in Irving Park, having resided for the past two months at 312 North Elm Street.

Dr. Simmons was a native of LaFayette, Tenn., the son of the late Mr. and Mrs. J. Matt Simmons and the eldest of a family of nine children.

He grew up at LaFayette, attending the schools there during his early years, later obtaining his degree in medicine from Vanderbilt University.

He first located at LaFayette, where he established a wide practice. However, he later gave up his profession and entered business for a period, but after a few years went to Tulane University at New Orleans and took special studies in eye, ear, nose and throat treatment. After completing this work he came to Greensboro. Here he established an extensive practice that extended over the past seventeen years with the exception of a period during 1934 when he went abroad and took up additional studies in Vienna.

Dr. Simmons was president of the Medical Arts Club, having succeeded the late Dr. C. A. Julian. He had also been a Shriner, a Knight Templar and a Kiwanian.

He was married in 1912 at Savannah, Ga., to Miss May Lovill Walker, of Ohio, and she survives. Also surviving are eight brothers and sisters, Mrs. Cammie Creasey, Hartsville, Tenn.; D. Eva Simmons, Westmoreland, Tenn.; W. P. Simmons, LaFayette, Tenn.; Mrs. Ida Hall, Galatin, Tenn.; D. P. Simmons, Castlina Springs, Tenn.; C. J. Simmons, Bowling Green, Ky.; Miss Nell Simmons, LaFayette, Tenn., and A. B. Simmons, Louisville, Ky.

A TRIBUTE TO JACOB HARRISON SHUFORD, M.D., OF HICKORY, N. C.

By A. A. Kent

Mr. President and Gentlemen of North Carolina State Medical Society:

I must thank you for giving me this opportunity, which is also a privilege, of paying this my tribute of respect to the memory of Dr. Jacob Harrison Shuford. During the last twenty years of my work as a physician, he was my neighbor, acquaintance and friend. Frequently I took medical and surgical patients to the Richard Baker Hospital. Twice members of my own family and household were committed to his care.

I do not wish to dwell upon his astute and profound knowledge as a physician. This was well exemplified in his work. It was as a surgeon that he excelled in the medical profession, though he might have attained distinction in either branch of the profession. His splendid life work as a surgeon will live in the memory of the people of the country that he served, and should live in the annals of our State Medical Society, of which he was a faithful member.

It is of Dr. Shuford, as a man, a physician, and a surgeon, all combined in one, that I wish I might be able to pay a tribute worthy of his memory. As a man he was conscientious, honest, religious, a man of vision, with the spirit of manly independence and self-reliance. He inherited from a long line of Shufords and other pioneers, dating back to the earliest settle-

ment in the Piedmont section of the State (about 1750) courage to meet perils with faith and fortitude, and to overcome difficulties as a physician and surgeon. In the solitude of the wilderness his ancestors met and overcame obstacles. In the operating room he faced perils, endured suffering, and conquered difficulties.

His crowning virtues were modesty, sympathy and unobtrusiveness. His pioneer ancestors have had part in choosing our State motto, "Esse Quam Videri"—"To Be Rather Than To Seem To Be." That motto was lived in his daily work and life among his fellow men. These three virtues were warp and woof in his life and character.

There is a life-trail of divine appointment for every one; happy is he who finds that trail and walks therein.

There is a life-task of divine appointment to every man. Most meritorious is the most faithful in its performance. Dr. Shuford found that trail and walked therein; he found that task and performed it well. He did things without boasting, and has left it to others to write down his deeds. These traits endeared him to the people with whom he came in contact, and for whom he labored. His splendid abilities, gracious personality, and exemplary life, will live long in their memories.

Woven in with his other splendid traits shone a radiant faith and love for his Church and the Christian religion. One of the beatitudes taken from "The Sermon on the Mount," is especially applicable in his case, "Blessed are the pure in heart, for they shall see God." In his walk, and work, and life, he worshipped the True and Living God.

DR. WILLIAM BURDETTE CHAPIN

By William Clyde Thomas, M.D., Siler City, N. C.

Dr. William Burdette Chapin, fifty years of age, son of the late Dr. H. T. and Annie F. Chapin, died at his home in Pittsboro, North Carolina, on Wednesday morning, November 6, 1935, after an extended illness of several months. Dr. Chapin was a direct descendant of Decan Samuel Chapin whose statue called "The Puritan," by St. Gaudens now stands on the square in Springfield, Mass. His grandfather having come South just prior to the Civil War.

He received his education at Guilford College, North Carolina Military Academy, the University of North Carolina, and the New York Medical School. After his graduation he practiced medicine in Townsville, North Carolina, until after his father's death, when he came to Pittsboro, North Carolina, filling his place as one of the leading physicians of this section

Dr. Chapin was always a student, keeping abreast of the times in medical science. He loved his profession, always ready to relieve suffering regardless of remuneration. He was rarely gifted in those virtues which won for him distinction and loyal support of his associates; he will be missed

in the civic walks of life and in the religious atmosphere of his community. To say that he was my friend is to say also that he was the friend of all humanity. He was the trusted friend of old and young alike who hailed him with confidence. He knew the secret of beautiful living and fitted perfectly into community life, all projects for the betterment of the citizenship met and felt his loyal support.

He was a member of the Baptist Church since early manhood; and an active and loyal member of the Junior O. U. A. M., a Mason, member of the Columbus Lodge, No. 102, member of the County Medical Association and the Medical Society of the State of North Carolina, the Seaboard Air Line Railway Surgeons, being local surgeon for many years.

The funeral services were held from the First Baptist Church at eleven o'clock Thursday morning, November 7, conducted by the Rev. T. Y. Seymour, pastor. Masonic rites were administered.

Surviving are his widow and three children, his wife formely Miss Foy Fiske, William B. Chapin, Jr., Mrs. T. S. Morgan of Pittsboro, and Mrs. W. B. Morgan of Columbia, S. C. One brother, George T. Chapin of Ocala, Florida, one sister, Mrs. E. B. Hatch of Pittsboro, N. C.

He sleeps in the bosom of Mother Earth, in the beautiful sunny South awaiting the call of the Great Physician and in Mark Twain's words we say:

Warm Summer sun,
Shine kindly here;
Warm Southern winds,
Blow softly here.
Green sod above,
Lie light, lie light.
Good night, dear heart,
Good night, good night.

DR. CHARLES S. TATE

Ramseur, May 26.—Dr. Charles S. Tate, 73, for 40 years a physician and surgeon in Ramseur, former school teacher in Pender, Bladen and Brunswick Counties, and holder of a number of city and county offices, died yesterday after a long period of ill health. Funeral services will be held tomorrow afternoon here. He is survived by two daughters and a son.

JOSEPH PINCKNEY TURNER, M.D., HONORARY FELLOW

Greensboro, N. C.

By W. M. Jones, Greensboro

Suddenly, like a clap out of a clear sky did Dr. Turner depart this life on Sunday evening, September 29, 1935.

Born in Iredell County, N. C., on December 18, 1871, where his early

life was spent. His preparatory schooling was received from the local schools and his pre-medical at Trinity College, Trinity, N. C., where he distinguished himself not only as a student but as a member of the champion football team, on which were many who later became outstanding citizens of the State. He received his medical training at the University of Maryland, graduating in the Class of 1896, and was appointed to serve one year at the Maryland Lying-In Hospital, coming to Greensboro, N. C., in 1897 where he began the practice of his profession.

Soon after coming to Greensboro, he was made Assistant Medical Director of the Security Life & Annuity Company, which occupied only a part of his time. He was also County Coroner for years.

In 1912, when the Security Life & Annuity Company merged with the Jefferson Standard Life Insurance Company he was made Medical Director in which position he was very active to the time of his death. He was a member of the Guilford County Medical Society, and an Honorary Fellow of the Medical Society of the State of North Carolina.

He was married on January 16, 1901, to Miss Eva Lindley, who with one daughter, survives.

Dr. Turner was a man in every sense and possessed of many admirable characteristics, the most outstanding of which was his loyalty: loyalty to high ideals, to friends, to profession and to family.

DR. J. P. TURNER, HONORARY FELLOW, DIES VERY SUDDENLY HERE

By W. C. Ashworth

Dr. Joseph Pinckney Turner, 63, for the past 28 years medical director of the Jefferson Standard Life Insurance Company, died very suddenly at his home, 615 W. Market St., at 7:30 o'clock on the night of September 29, 1935, from a heart attack.

Dr. Turner apparently had been in good health and his death came as a shock to the community in which he had long been known as one of the leaders of the medical profession and a prominent citizen.

Dr. Turner entered the practice of medicine here, specializing in surgery, about thirty years ago, later accepting a position as assistant medical director of the Security Life and Annuity Comnay. When that company merged with the Jefferson Standard Life Insurance Company he became medical director of the latter company, a position in which he continued until his death.

He is survived by his wife, who before marriage was Miss Eva Lindley, daughter of the late Mr. and Mrs. J. Van Lindley and a sister of the late Mayor Paul C. Lindley; one daughter, Mrs. Robert P. Gorrell, Jr., of Greensboro; one brother, Henry C. Turner, of Guilford College; one sister, Mrs. Anne Owens, of Leaksville; one half-brother, J. C. Turner, of Richmond, Va., and one half-sister, Mrs. Florence R. Cowan, of Dickson, Tenn.

Dr. Turner was born December 18, 1871, in Cool Springs, Iredell County, the son of the late Henry and Mary Anne Turner. He graduated from Trinity College, now Duke University, and received his medical degree from the University of Maryland. He took special surgery studies at Jefferson Medical College, Philadelphia, Pa.

He came to Greensboro and began practicing here, a practice which he continued until 1918 in addition to his services with the Jefferson Standard Life Insurance Company. He was married in 1901.

Dr. Turner was recognized not only as an outstanding member of the medical profession but also as an alert civic leader and an astute business man. For the past three years he had served as a member of the executive committee and of the finance committee of the Jefferson Standard Life Insurance Company. He had been a member of the board of directors of the Company since it was organized.

Dr. Joseph Pickney Turner's early associations were with his father's farm and mills in Iredell County. Most of his preliminary education was received in the district school at Sparta. He was also a student at Moravian Falls Academy during the last several months of its existence, the school being dissolved because its head and principal chose to go as missionary to Korea. After that the young student finished his preparatory work in Oak Institute at Mooresville. In 1891 he entered Trinity College for a two-year course, going from there to the medical department of the University of Maryland from which he received his M.D. degree.

He began his private practice in Greensboro in 1897, devoting his undivided attention to this work until he assumed the position of assistant medical director of the Security Life and Annuity Insurance Company, and later that of medical director of the Jefferson Standard Life Insurance Company, an office in which he had served with distinction since 1907.

In recognition of his service and ability he was elected chairman of the American Life Convention for 1917-18. He was also honored with memberships in the Medical Society of the State of North Carolina, the Guilford County Medical Society, the Tri-State Medical Society, and the American Medical Association.

He was a member of the Masonic fraternity and both he and Mrs. Turner served as active members of West Market Methodist Church. Mrs. Gorrell, born Mary Sandra Turner, is the only child.

OSCAR EARNEST UNDERWOOD

By J. Street Brewer, M.D., Roseboro, N. C.

On Sunday morning, September 15, 1935, just as the sun was rising over the eastern horizon, the soul of Dr. Oscar Earnest Underwood vacated his mortal body and took flight to the Great Physician who had called it to its eternal home. He died as he had wished, attended by his devoted

wife, Ethel Shearin Underwood, while his two children and many brothers and sisters were near. Though the immediate cause of death was an acute exaccerbation of chronic cardiorenal disease Dr. Underwood had suffered from a complication of several diseases of a chronic nature for several years and his passing was not wholly unexpected. However, his prostration was of short duration and he virtually died in the harness as he was at work in his office just five days prior to his death.

Born and reared on a farm in Sampson County near Salemburg Dr. Underwood was the son of Alvin Earnest and Cora Crumpler Underwood. He was just a little past fifty years of age, having been born on January 7, 1885. Receiving his academic education at Salemburg and Buie's Creek Academies he was graduated from the University College, Richmond, in 1909, was licensed the same year and immediately commenced practice at Earnest Post Office, his home, near Salemburg. He practiced in this locality until 1913, when he moved to Roseboro where he resided until his death. In 1913, he and Ethel Shearin were married and to this union were born two children. The daughter is now a teacher in one of the high schools of this county; the son is now a student in high school.

Soon after he started practice Dr. Underwood showed that he was a physician of more than average ability and it was not long before he had a large and flourishing practice. He was not only skilled and learned in medicine, but knew the psychology of the practice of medicine, the Art of Medicine as it were, or the "technique" of medicine, if you please. Dr. Underwood knew how to approach the patient and he treated the patient as a personality as well as one with a sick body. He was a past master in handling the family and other relatives and this ability not only drew to him a large and devoted clientele, but enabled him to get results and heal the broken body when others with less of the Art of Medicine would have failed. Truly it can be said of him that he was a physician and when he entered the sick room fear and nervousness on the part of those present took flight and peace and calm prevailed, for the "doctor" had come and he radiated hope and cheerfulness. Another thing that impressed me with Dr. Underwood was that when he saw that medical skill was unavailing and that the Great Summons had been issued he did not abandon the patient to his family and a lost hope, but continued his ministrations to the dying and bereaved, thus making the last hours of the afflicted one peaceful and painless and comforting to those bereaved.

This sketch of Dr. Underwood would not be complete without mention of his activities outside the practice of medicine. Here was a man of manifold abilities, not only professionally, but also in a business and social way. He lived life to the fullest extent and in the twenty-five years of his active manhood he participated in more things and accomplished more than most of us would in fifty. Dr. Underwood was a public spirited man and any project or movement for the public or community good at once enlisted his whole-hearted and active support. He not only loved life and

lived it in many various activities, but he loved his community and his fellow-man and worked for them as well. He was at one time a member of and later Chairman of the Sampson County Board of Education. He was an active supporter of the church and schools, being at the time of his death a trustee of Pineland College. For fifteen years he was actively in the automobile business and at one time owned the Ford agency in both Roseboro and Clinton. However, in 1929 he sold out his automobile interest and devoted the remainder of his life to the exclusive practice of medicine, thus demonstrating that though active in business he had not lost touch with his profession, and ending his manhood as he began it, in the service of his first love.

In his social life Dr. Underwood was well-known for his friendliness, his geniality and his ability as a conversationalist. He enlivened and made happy many a social gathering. He was a member of the Baptist Church, the J. O. U. A. M., the order of the A. F. & A. M., the Scottish Rite Consistory and the Shriners. His funeral services were conducted by his pastor in the Baptist Church at Roseboro and his remains were laid away by the brother members of the fraternal orders of which he was a member.

Dr. Underwood was interested in and an active exponent of organized medicine. He joined Sampson County Medical Society in 1909, and the State Society in 1910, and was an active member of and supporter of both until his passing. He was President of this Society at the time of his death, which office he had held on numerous occasions before.

In the passing of Dr. Underwood Sampson County lost a useful citizen and organized medicine a loyal and active member and his great hosts of patients a friendly counsellor and a beloved physician. While from his cold pale hands have dropped forever the working tools of the physician the good that he did lives on, his spirit is still among us and is not dead, but sleepeth, and now

"The laborer's task is o'er
The battle day is past,
Upon the farther shore
Lands the voyager at last.
Grant him, Lord, eternal rest
With the spirits of the blest."

DR. ROBERT BRUCE WILSON: A EULOGY

By J. M. Lee, M.D.

With deep regret I bring to the attention of this Society the death of one of its members who has long occupied a conspicuous place upon our floor and within our hearts.

Dr. Robert Bruce Wilson of Newton Grove died of cancer at Highsmith's Hospital in Fayetteville on Friday, July 12, 1935, to which place

he had gone for treatment five weeks earlier. He was the son of Joseph Wilson and Elizabeth Ward Wilson. He is survived by his widow, who was Norva Stroud of Alamance County, and one son, Robert Bruce Wilson, Jr., of Clinton. Another son, Dr. Thomas Hooper Wilson, died of influenza during the general epidemic in 1918 at the early age of 29 years.

Dr. Wilson began his life on July 6, 1856, in Taylor's Bridge Township, Sampson County. He grew up on a large farm and was educated in the public schools and at Turlington's Institute in Smithfield. He entered the College of Physicians and Surgeons in Baltimore and received his degree of Doctor of Medicine in 1889, following which he began the active practice of medicine in Bunn Level, Harnett County, and three years later, in 1892, he moved to Newton Grove where he lived and continued in this profession until a short time before his death.

In the passing of Dr. Wilson Sampson County has lost one of her landmarks, a typical family physician of the old school. He was idolized by his patients, and admired by his colleagues. He was strictly ethical in all his dealings and was ever ready to lend a helping hand to the younger members of the profession.

A kindhearted and unselfish man as well as a skilled physician, he gave his time and skill liberally to the poor, the unfortunate, and the ill ones of his community, by day or night, regardless of considerations of convenience or comfort. Dr. Wilson was ever the companion and guardian of his patient to any extent that need required.

Dr. Wilson was a member of the Sampson County Medical Society, a Fellow of the State Medical Society, and also a member of the Free and Accepted Order of Masons. He was greatly interested in the activities of these organizations, especially of the Sampson County Medical Society, of which he was a charter member. He was ever faithful to attend its meetings, and gave generously of his time and talents to further its objectives. He was active to a remarkable degree up to a short time before his fatal illness. But at last his strong will was forced to yield to the infirmities of the body, and he gradually passed into a period of increasing disability and pain.

Now at last he lies at rest. He walks no more among us. His familiar figure will not be seen again in this hall. But to us he has left the unfading memory of a forceful personality that lent dignity and distinction to this Society, of a physician whose daily work expressed the loftiest ideals of our profession, of a friend and comrade whose loyalty shrank before no obstacle or sacrifice. As much can be said of few of us, more of none.

With this simple but heartfelt tribute to a life worthily spent, we bid him farewell. May the peace that passeth all understanding be his forevermore.

* * * *

President Ringer: We have suffered a grievous disappointment which, however, was quite unavoidable. When I went to the postoffice on

Sunday morning to get my mail, I found a letter from Dr. Rosenau of Chapel Hill saying that an unexpected indisposition kept him from coming here. I thought, "Well, that is too bad," and it was.

The next letter I opened was from Dr. Irvin Abell of Louisville, Kentucky, and its wording, though not identical, was in exactly the same tenor as Dr. Rosenau's. So my first greeting to the Sabbath morn was the knowledge that two of our guest speakers had to disappoint us at the last minute. There was nothing I could do about it. It was quite too late to secure a substitute, and to ask any man to just come in would not have been complimentary.

So I decided to let nature take its course and get along as well as we could, under the circumstances. It is a great disappointment to me and I know it is an equally great disappointment to you.

We have made one change in the program. We have transferred one of the papers that was to be read tomorrow morning to this session, which will give us ample time tomorrow morning to cover everything that is on the program, including Dr. McLester's address, and finish, I am sure, in good time, so that it will not be the ordinary jam that we usually have on Wednesday at twelve o'clock, before the Conjoint Session of the Medical Society and the State Board of Health.

Therefore we will skip Item 8 on the program and we come to Item 9, "Surgical Significance of Meckel's Diverticulum with Particular Reference to the Occurrence of Peptic Ulcer," by Dr. Donnell B. Cobb.

Dr. Cobb! (Applause)

MECKEL'S DIVERTICULUM WITH PEPTIC ULCER

By Donnell B. Cobb, M.D., M.S., F.A.C.S., Goldsboro, N. C.

Historical: In a study of Meckel's Diverticulum one is greatly impressed by its discoverer—the man for whom it was named—Johann Fredrich Meckel. He was not only a man of outstanding ability but he was a member of a most remarkable family of Prussian physicians.

His grandfather, Johann Fredrich Meckel, Sr., was professor of botany, anatomy and obstetrics at the University of Berlin. It was he who discovered the sphenopalatine or Meckel's ganglion. He was the first to discover the submaxillary ganglion and he was the first teacher of midwifery at the Charitè. His father, Phillip Fredrich Meckel, was professor of anatomy, surgery and obstetrics at Halle. He was a favorite obstetrician at the Russian Court, and in his will he left his skeleton to the Anatomical Institute in Halle.

Johann Fredrich Meckel, Jr., (Fig. 1) the discoverer of the diverticulum, outdistanced any other member of his family. He was an eminent pathologist and comparative anatomist, and was known as the German Couvier. At the early age of twenty-five he became professor of anatomy

at Halle, and he wrote voluminously on anatomical, pathological and physiological subjects.

His brother was professor of anatomy at Bern, Switzerland, and his son was professor of anatomy at the University of Berlin.

Meckel's diverticulum is due to the persistence of a portion of the vitelline duct or yolk stalk. Being a rudimentary blind pouch on the intestinal tract it is subject to the same disease processes which have brought fame and dishonor to the appendix—inflammation, gangrene and perforation.

In Meckel's description of the diverticulum (1812) he states that, "The structure of the inner layer is exactly the same as in the portion of the intestine from which the diverticulum springs." He evidently did not recognize that, at times, the diverticulum is lined wholly or in part by gastric mucosa and that it may be the seat of peptic ulcer formation with subsequent hemorrhage and perforation. Denecke, in 1902, reported the first ulcer in Meckel's diverticulum but it remained for Deetz, in 1907, to point out the occurrence of gastric mucosa in these cases and to stress the peptogenic character of these ulcerations.

No satisfactory explanation of this heterotopic gastric mucosa has ever been found. In the early human embryo the yolk stalk has a very large opening into the midgut and is closely related to the stomach, duodenum and pancreas. A portion of slightly misplaced or overgrown gastric mucosa into this yolk stalk in the embryo would result in its presence in a Meckel's diverticulum.

Incidence: The incidence of Meckel's diverticulum is difficult to determine. Because few surgeons make a routine search for its presence, operating room statistics are not accurate. At the Johns Hopkins Hospital, 15 cases were found in 2,600 necropsies, or .57 per cent, while Mitchell, of Chicago, in 1,635 autopsies reported 39 cases or 2.38 per cent. From these combined figures the incidences can be placed at 1.2 per cent. It occurs twice as often in males as in females.

Peptic ulcer seems to be the commonest complication of Meckel's diverticulum. Schaetz in a careful study of thirty diverticula found that 50 per cent contained abnormal elements. Pancreatic tissue or mucosa resembling that of the duodenum or jejunum may be found within its lumen. He estimates the incidence of gastric mucosa at 16 per cent. Certainly all cases containing gastric mucosa are cases of potential ulcer with hemorrhage and perforation.

Huebschmann compares the ulcers in Meckel's diverticulum to the gastro-jejunal ulcers following gastroenterostomy. In both instances the ulcerations occur at the junction of the gastric and intestinal mucosa. Schaaf analyzed the fluid content of the diverticulum removed by him and found it to contain 40 free hydrochloric acid and 70 total acidity.

Lindau and Wulff call attention to the fact that the secretion of hydrochloric acid from gastric mucosa contained in a Meckel's diverticulum "begins or increases synchronously with the activity of the stomach—this implies that the production of gastric juice in Meckel's diverticulum occurs at a time during which the small bowel is empty and when no neutralization takes place by food and intestinal juice. In such manner especially favorable conditions are created for the generation of peptic lesions, a circumstance that we find borne out by the occurrence of these ulcers in Meckel's diverticulum even at an early age."

Besides this article by Lindau and Wulff other excellent articles dealing with peptic ulcer in Meckel's diverticulum have recently appeared by Mason and Graham, and Johnston and Renner. A review of the literature reveals 97 cases. To this number I would like to add three, making a total of one hundred.

CASE REPORTS

Case 1. L. G., a well developed boy of eighteen years, was pursuing his usual occupation on the farm when he became suddenly blind, fainted and shortly afterward passed a large amount of dark blood from his bowels (estimated at about a quart). His past history was negative. At the age of nine years he had an attack of abdominal pain which was diagnosed by a physician as appendicitis and treated expectantly. He had been well otherwise except that for six months preceding his present illness he had had an occasional substernal gnawing sensation which was unrelated to the time of eating but was relieved by taking soda. The day following the onset of his trouble he became nauseated and vomited twice. There was no blood in the vomitus. That day he also passed a small amount of very dark blood from his bowels. He was placed under the care of Dr. C. H. Rand, with whom I saw him that night. In the poorly lighted farm house the boy appeared extremely ill. He responded to questions very poorly or not at all. The skin was cool, the temperature subnormal, the pulse rate 130 per minute and of poor volume. Physical examination was otherwise negative except for a slight tenderness along the right side of the abdomen. A positive diagnosis was not reached but it was felt that he probably had a bleeding duodenal ulcer. He was removed to the hospital in order that he might be given a transfusion and other supportive treatment and his condition studied more thoroughly. When he arrived two hours later he seemed to be much improved. The skin was warm and his temperature normal. The pulse rate was 100 and of fair volume. He was comfortable and abdominal palpation revealed very little tenderness along the right side. Still adhering to the original provisional diagnosis he was given a hypodermic of morphine, an ice cap was placed upon the abdomen and he was allowed to go through the night. The following morning his temperature had risen to 99°, the pulse rate was 106, there was definite tenderness and rigidity in the right lower quadrant, the tenderness extend-

ing somewhat across the lower abdomen. Rectal examination disclosed marked tenderness throughout his pelvis. Urinalysis was negative. Examination of his blood showed 80 per cent hemoglobin, 4,375,000 red cells, 18,000 leucocytes and 72 per cent polymorphonuclears. It was then felt that he had appendicitis, the appendix having ruptured since his admission to the hospital.

A right rectus incision was made. On opening the peritoneum there was seen a small amount of old blood. The appendix was found to be situated retrocecally. It was not acutely inflamed and was not the cause of the patient's symptoms. It was removed and the stump inverted. The terminal ileum was then explored. A Meckel's diverticulum was found about 45 cubic millimeters from the ileocecal junction. The diverticulum was about 5 cubic millimeters in length and 3 cubic millimeters in diameter at its base, tapering to a tip. There was definite evidence of acute and chronic inflammation about the diverticulum. Several of the adjacent coils of the ileum were bound into the inflammatory process by a plastic exudate and the diverticulum was densely adherent to one side of the ileum. The base of the diverticulum was opposite the mesenteric attachment of the ileum. (Fig. 2.) On separating these structures a perforated ulcer about one-half cubic millimeter in diameter and having a punched-out appearance was found just above the base of the diverticulum. The remainder of the diverticulum was not involved by the diseased process. (Fig. 3.) The diverticulum was resected, using a rubber-covered clamp on the ileum and the opening in the ileum was closed transversely, using two rows of continuous chromic gut suture and reinforcing with a Lembert suture. This left a satisfactory lumen in the ileum. No further exploring was done. Two Penrose cigarette drains were placed in the pelvis and the incision closed.

Convalescence was uneventful. The boy left the hospital on the fourteenth day after the operation. When seen again two months later he appeared in excellent health.

Pathologic examination by Dr. J. B. Bullitt. The serosal coat is very thick; it is not covered by endothelium but by a sort of hyaline material; apparently this has been adherent to some neighboring viscus. The muscle coat is well developed in part of the specimen, very thin in part of it. The mucosa is not like the typically normal mucosa of either stomach or gut. A small portion has villi and the straight tubules like the gut; most of the epithelium in this is of the goblet-cell variety. The greater part of the mucosa has crypts like the stomach, and rather tortuous glands. The epithelium in the crypts is entirely goblet cells, while that in the tubules is almost a continuous layer of oxyntic cells. The performation is just at the junction of the two types of mucosa. There is very little inflammatory exudate about the ulcer. There is moderate leucocytic infiltration, chiefly lymphoid) throughout serosal coal.

Case 2. Richard K., a white boy of 9 years, was first seen in 1931. At that time he had several severe exsanguinating intestinal hemorrhages, passing large amounts of light and dark blood. There had been no pain associated with this condition and his past history was negative for any abdominal discomfort or digestive disturbance. This boy was seen a short time after another patient had been operated upon for a perforated peptic ulcer of Meckel's diverticulum and with this case freshly in mind, a diagnosis was made of bleeding ulcer of Meckel's diverticulum and operation was advised. The parents refused operation, however, and took the boy home.

He was seen again, one year later, in 1932. In the interim he had had no further intestinal hemorrhage and had had no abdominal discomfort. On this second visit he did complain of diffuse abdominal discomfort of 48 hours duration. This discomfort had become localized in the right lower quadrant where he complained of much tenderness. There had been no nausea and vomiting. A complete physical examination revealed a well nourished and developed boy of 10 years and all findings were negative except well marked tenderness and rigidity in the right lower quadrant. His temperature was 98 3/5, pulse 88; white blood count 13,000 with 91 per cent neutrophils; the urinalysis was negative. From these findings a diagnosis was made of acute appendicitis associated with a peptic ulcer in a Meckel's diverticulum.

The patient was operated upon the same day, using a mid right rectus incision. The appendix was found situated retrocecally and was very acutely inflamed. After the appendix was removed, exploration of the lower ileum showed about 18 inches from the ileo-cecal valve there was a Meckel's diverticulum situated on the antimesenteric border. (Fig. 4.) The diverticulum was 6 cm. long and 2 cm. in diameter at its base, tapering to the tip and thus being conical in shape. There was a fibrous cord, the size of a match, running from the tip of the diverticulum to the umbilicus. The diverticulum was resected removing a cuff of ileum. The adjacent mucous membrane of the ileum appeared normal. The opening in the ileum was closed transversely with two rows of Lembert sutures, and the abdominal incision was closed without drainage. The patient made an uneventful convalescence and was discharged from the hospital 12 days later.

Microscopic examination by Dr. J. B. Bullitt. The mucosa is thick and is thrown into a number of rugae. The surface epithelium is tall columnar, with clear cytoplasm and basal nuclei. Beneath this, there are fairly long tubular glands, lined with columnar epithelium which takes a fairly deep stain; between these columnar cells are a moderate number of globular cells with eosinophilic granules. This picture resembles the mucosa of the stomach. At one end of the specimen there is a small piece of the gut; and at the juncture of the two types of mucosa, there is a shallow ulcer, whose base is covered with a thin layer of necrotic debris. A very moderate amount of leucocytic exudate is about the ulcerated region, and

a scanty leucocytic infiltration is seen everywhere through the specimen. The mucolosa is scantily developed, consisting of merely occasional bundles of fibers imbedded in a thick layer of connective tissue.

Case 3. John P., white male infant 1½ years old. This patient was brought in with the complaint of excruciating abdominal pain, and the passage of bloody stools. The parents stated that the child had always seemed healthy. Four days before admission they noticed the passage of a large, dark, offensive stool resembling old blood. The child had four such stools the same day. The following morning, or three days before admission, and while eating breakfast, the child complained of intense pain in the abdomen, and that same morning there was another dark offensive bloody stool. The following day the abdomen was somewhat swollen and the child began to vomit. The vomiting continued and the abdominal swelling gradually became more pronounced. A dose of castor oil was given the day the first bloody stool was noted, and again following the excruciating abdominal pain while eating breakfast on the next morning.

On examination the child was a well developed infant of 1½ years. He was in definite shock. The rectal temperature was 101 3/5 and the pulse was so thready and weak that it could not be counted. The abdomen was markedly and diffusely distended; it was tympanitic throughout. There were no palpable masses; there were no definite areas of rigidity, but there was a sense of increased resistence in the right lower quadrant. The child was put to bed, treated for shock and Dextrose in Ringers solution was administered. Eight hours later the child's condition was slightly improved and an exploratory operation was decided upon. A positive preoperative diagnosis had not been made, but it was felt that the child had had some rupture of a hollow viscus. The operation was performed through a right rectus incision. On entering the peritoneal cavity there was much free fluid and some intestinal contents. Examination of the appendix showed it to be mildly inflamed at its tip; it was not ruptured and did not appear responsible for the symptoms. Further exploration showed numerous adhesions of the ileum to the anterior abdominal wall just below the umbilicus. On separating these adhesions a Meckel's diverticulum appeared in the incision. (Fig. 5.) It could not be determined just how far from the ileo-cecal valve the diverticulum was situated. The diverticulum arose from the antimesenteric border of the ileum, it was conical in shape, being 2.5 cm. in diameter at its base and 1.5 cm. in diameter at its tip. It was about 4 cm. in length. At the junction of the diverticulum and ileum there was a punched out perforated ulcer. From this perforation was exuding a large amount of intestinal contents. The diverticulum was resected, removing a portion of the ileum. The opening in the ileum was closed transversely with two rows of Lembert sutures. No further exploring was done. The peritoneal cavity was washed out with three ounces of ether, and two cigarette Penrose drains were placed in the pelvis. During the operation the patient received continuous intravenous Dextrose in

Ringers solution, 500 cc. being given. Following the operation the child failed to react and died three hours later.

Pathological examination by Dr. C. C. Carpenter. Gross description: Specimen consists of a flattened piece of tissue that is 3.2x.6 cm. To one side of the center is an oval perforation .3 cms. in diameter. The outer side is apparently covered with a mesothelial surface. Around the opening through the specimen this surface shows a fibrino-purulent exudate. The lining consists of unbroken mucosa except for the perforation mentioned above. The walls of the perforation are smooth and clear cut. Microscopic description: Section shows the wall of an intestine, near the center of which there is a rounded perforation. The wall of the perforated area shows considerable necrosis and many neutrophils and lymphocytes. The mucosa for a considerable distance outside of the necrosed area shows necrosis with the submucosa and muscular layers preserved. An acute inflammatory reaction is seen throughout the section.

These 100 cases have been tabulated in two divisions. Table I contains 66 cases of ulcer in which mucosa was demonstrated microscopically. Table II contains 34 cases of ulcer in which no microscopical examination was made, or in which no gastric mucosa was found. In the few cases in which no gastric mucosa was found it is entirely possible that the microscopical search was not sufficiently thorough or the island of gastric mucosa that had been present was destroyed by the process of ulceration and perforation. In any event the symptomatology and the gross findings clearly belong to the peptic ulcer group. The two groups, therefore, are considered together. It is upon a study of these 100 cases of peptic ulcer in Meckel's diverticulum that this paper is based.

Age: This disease is essentially one of infancy and childhood. Although the ages in this series of cases ranged from 2 weeks to 53 years, the great majority occurred in early childhood. Seventy-four per cent were found in the first 15 years of life. Table III.

Sex: It has been noted that Meckel's diverticulum occurs twice as often in males. There is, however, a far greater preponderance of ulcer formation in males. Eighty-one of these ulcer cases occurred in males and 14 cases in females. Thus the sex distribution approximates that of duodenal ulcer and congenital hypertrophic pyloric stenosis. In 5 cases the sex was not stated. Table IV.

Pain: There is usually some associated abdominal pain. This symptom was complained of in eighty per cent of these cases. By no means does this pain always have the typical text-book location in the right lower quadrant and radiate to the umbilicus. It is not unusual for the discomfort to closely simulate that of duodenal ulcer, being situated in the epigastrium and periodic or post-prandial in nature, as in the cases of Magevaud, Huebschmann and the one reported to the author. At times the pains are colicky in nature. These periodic, post-prandial or colicky pains usually

occur in the adult cases. In many instances, however, and especially is this true in children, there is no history of pain until the time of perforation. Pain, of course, is much more frequent in the perforated cases, having occurred in 51 of the 55 cases, but it was also complained of in 29 of the 43 nonperforated cases.

Hemorrhage: Intestinal hemorrhage is the most frequent complication. The bleeding may be profuse and in the nonperforated cases reported by Collender and Taylor, it was the direct cause of death. The blood may be bright red but usually it will have undergone partial decomposition within the intestine and appear as a black, tarry stool, as though the hemorrhage had taken place high up in the intestinal tract. Mason and Graham have previously emphasized the importance of intestinal hemorrhage as a diagnostic sign and have called attention to the fact that the bleeding may extend, intermittently, over a period of months or years. Often being traceable to infancy or very early childhood. Intestinal bleeding was present in 72 of these 100 cases. It occurred with equal frequency in the perforated and nonperforated group.

Perforation: Next to hemorrhage the most frequent, and the most serious complication in peptic ulcers of Meckel's diverticulum is perforation. This occurred in 55 of the 100 collected cases.

It is not definitely known why ulcers of Meckel's diverticulum have such a strong tendency to perforate. It is true, however, that the walls of these diverticula are often poorly formed, containing, at times, but little musculature, and thus form a much thinner base for the ulcer than is the case in gastric or duodenal ulcer.

That perforation is an extremely dangerous complication is shown by the fact that 20 of these 55 cases died, a mortality of 36 per cent. No stronger argument could exist for an earnest attempt at early diagnosis and early operation, before the perforation has occurred. The contents of the lower portion of the ileum being more infective than that of the stomach and duodenum it is, of course, natural to suppose that a perforation in this location would be very dangerous. In the 43 nonperforated cases there were 5 deaths, a mortality of 12 per cent. Four of these cases, however, were not recognized during life but were found at autopsy. About the fifth case no particulars are given. In the cases that were operated upon before perforation had taken place there were no deaths.

Diagnosis: The correct preoperative diagnosis of peptic ulcer of Meckel's diverticulum must necessarily be made by the process of exclusion. It is essential, of course, that the possibility be kept in mind. During recent years the literature has contained an increasing number of articles dealing with this condition and as a result of this a correct diagnosis has been made with increasing frequency. The more common causes of abdominal pain and melena, such as gastric and duodenal ulcer, polyps, malignancy, intussusception, a low grade ulcerative colitis and hemorrhoids must first be excluded.

Fig. 1. Johann Friedrich Meckel (1781-1833). The discoverer of the diverticulum. Courtesy *American Journal of Surgery.*

The diagnosis was first correctly made by Dr. E. A. Ketterer, of Montport, Wis., in 1927. He had seen a similar case previously. Since then a total of 17 correct preoperative diagnoses have been made, six of which were during 1935.

In the nonperforated cases there were 9 correct diagnoses. Their ages ranged from 13 months to 29 years. All of these cases passed large amounts of blood, many of them intermittently over a period of months or years. Most of them complained of some abdominal pain. This was either colicky in nature and closely related to the time of bleeding or it was periodic and post-prandial in character, resembling duodenal or gastric ulcer. Such a diagnosis is justifiable only after excluding the more common causes of melena and abdominal pain. When, however, no apparent cause can be found for such symptoms an exploration is justified in order that an ulcerated diverticulum might be found and removed before perforation has taken place.

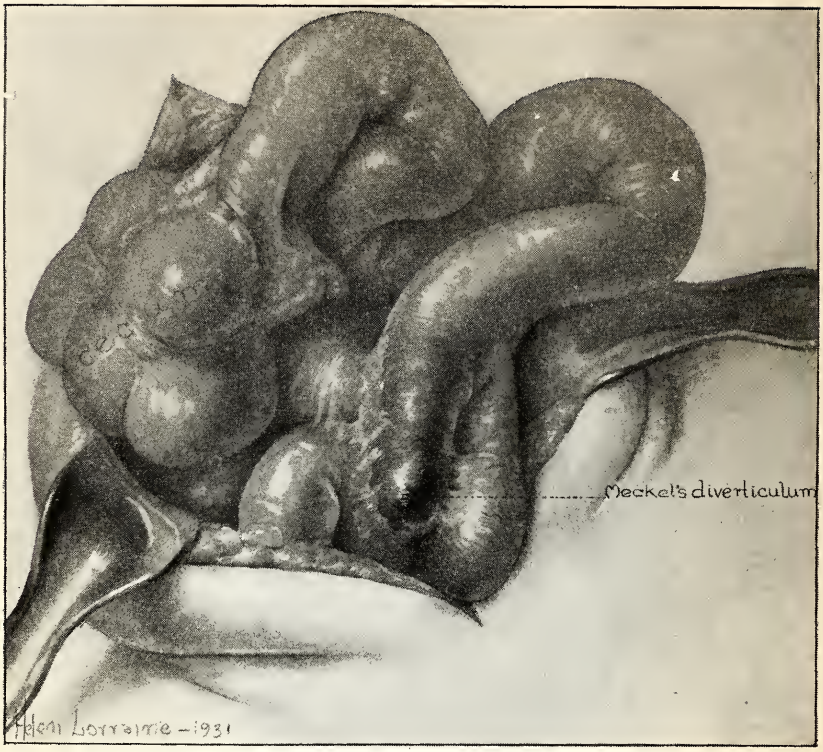


Fig. 2. Case 1. Meckel's diverticulum adherent onto adjacent intestines.

In the perforated group there were 7 correct diagnoses. Their ages ranged from 7 months to 7 years. All of these cases, too, passed large amounts of blood by rectum. Six of them had much abdominal pain. (In one case this was not stated.) It is true that the great majority of the perforated cases were operated upon for appendicitis, peritonitis, intussusception or obstruction. However, whenever there is a so-called "acute abdomen" associated or preceded by the passage of a large amount of blood by bowel, exploration is demanded and a careful search for Meckel's diverticulum should be made. (In one case in which a correct diagnosis was made it was not stated whether perforation had taken place.)

And so, in final analysis, the diagnosis of peptic ulcer in a Meckel's diverticulum, whether perforated or not, must depend upon the passage of large bloody stools and abdominal pain of variable degree. It should be remembered, however, that pain may be entirely lacking. When none of the more common causes which produce such symptoms can be found an ulcerated diverticulum must be considered and operation is indicated.

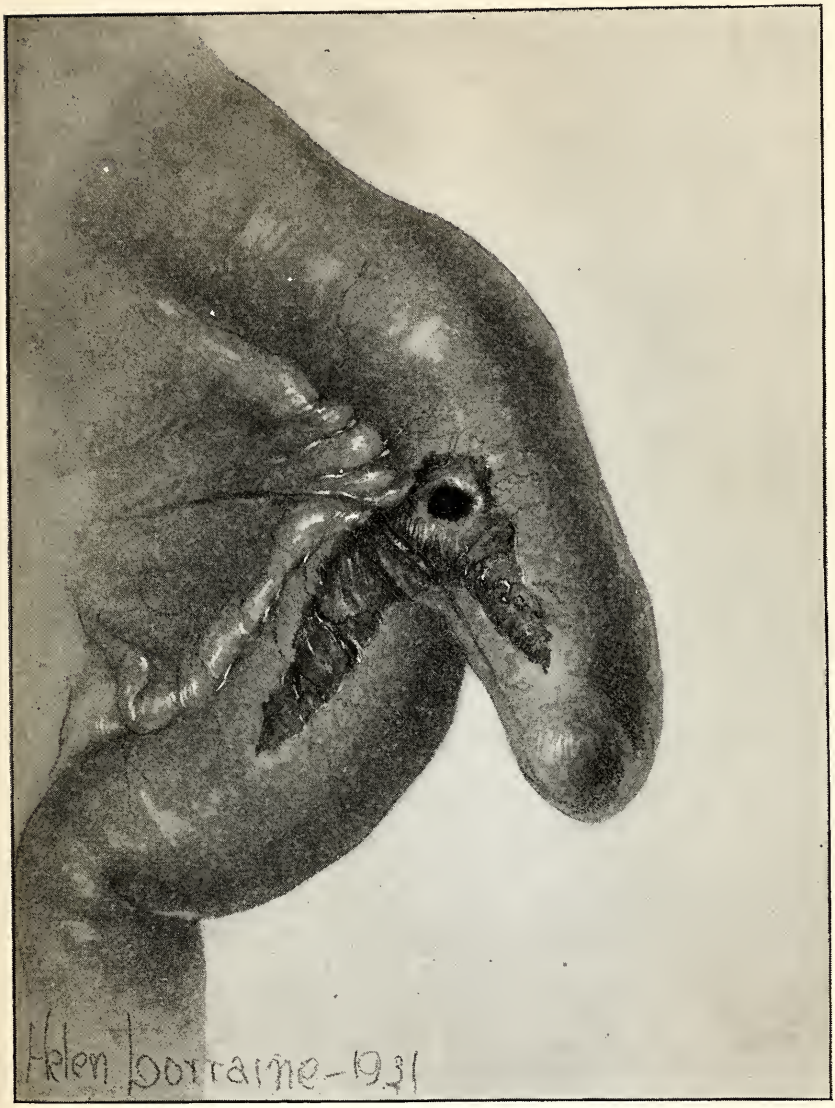


Fig. 3. Case 1. Perforated ulcer at base of diverticulum.

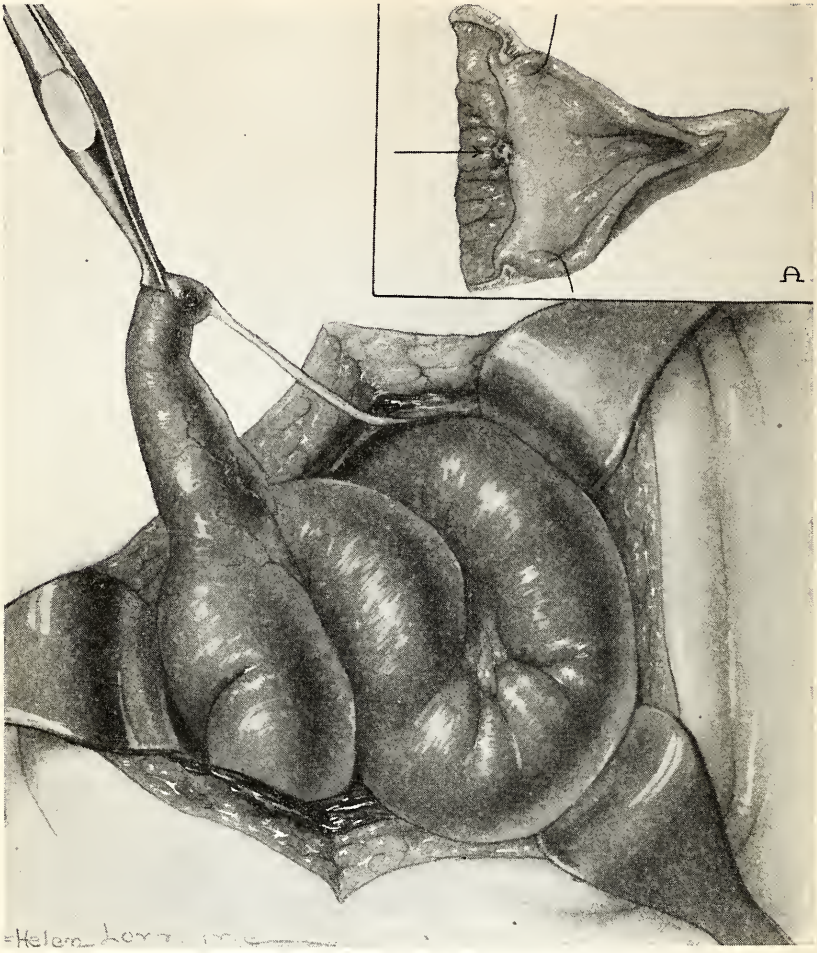


Fig. 4. Case 2. Meckel's diverticulum with fibrous cord running to umbilicus. Inset shows peptic ulcer at base of diverticulum.

Those who have used the X-ray in these cases have found it of no diagnostic assistance.

Treatment: The procedure of choice in these cases is resection of the diverticulum with a portion of the adjacent ileum. Because the gastric mucosa may occupy any portion of the diverticulum and because the ulcerations occur at the junction of the gastric and intestinal mucosa these ulcers are situated in various parts of the diverticulum; i.e., in the tip, neck or base of the diverticulum, or outside of the diverticulum and in the ileum proper. Table VII shows the various locations of the ulcer in the 45 cases in which this was stated. Because so many of them occur at

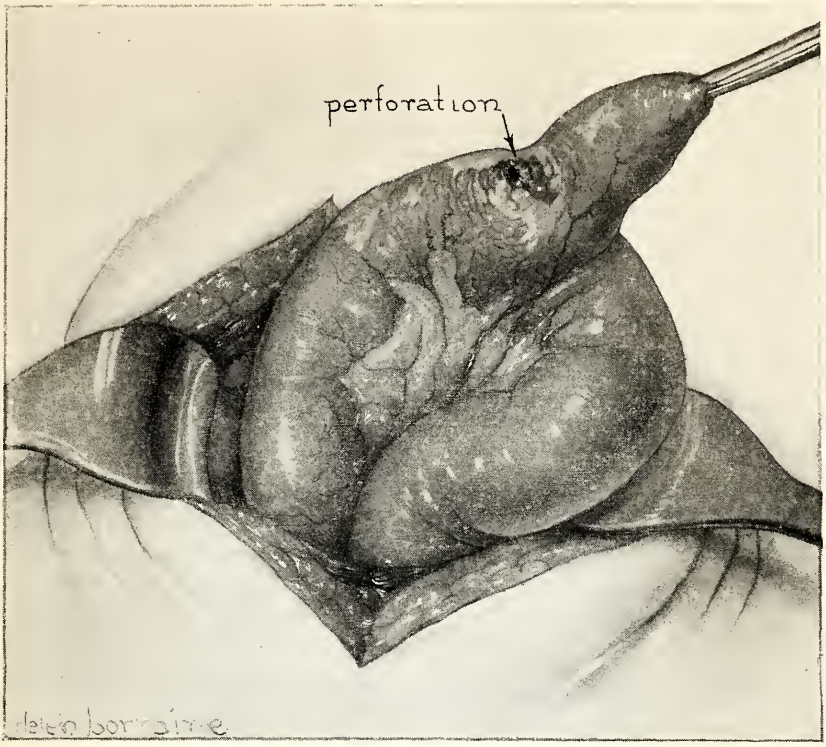


Fig. 5. Case 3. Meckel's diverticulum with perforated ulcer at base.

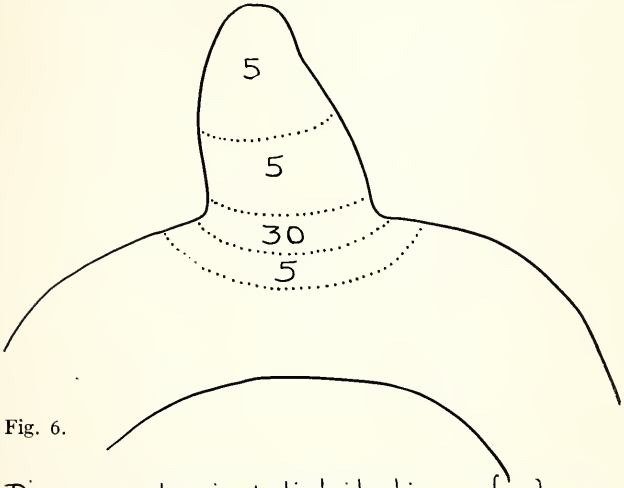


Fig. 6.

Diagram showing distribution of ulcers in 45 cases in which this was specified.

the base of the diverticulum and a few out in the ileum it is always advisable to remove a cuff of ileum about the diverticulum when doing a resection.

Comment: Unquestionably numerous cases of Meckel's diverticulum with ulceration have been encountered and operated upon that have not appeared in the literature. Meckel's diverticulum is no longer considered a surgical curiosity and if the whole truth were known a peptic ulcer in this location would probably not be a great rarity.

In all operations on the gastro-intestinal tract, when the symptoms are not readily accounted for by the findings, a search should be made for a Meckel's diverticulum, and particularly in childen. Especially is this so when operating for appendicitis and the appendix is not sufficiently inflamed to account for the symptoms. If this is done the cause of many cases of idiopathic hemorrhage will be found, instances of unexplained peritonitis will be fewer and many perforations of the diverticulum will be avoided.

Because any Meckel's diverticulum possess numerous possibilities for serious trouble, and because a peptic ulcer in the location has such a strong tendency to perforate, resulting in a high mortality, any Meckel's diverticulum found at operation should be removed whenever possible.

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TABLE I
ULCER CASES WITH MICROSCOPICALLY VERIFIED GASTRIC MUCOSA

Author	Year	Age	Sex	Symptoms		Preoperative diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
1. Hilgenreiner (33)	1903	18	M.	+	+	Appendicitis	—	+		
2. Deetz (14)	1907	9	M.	+	—	Appendicitis	+	+		
3. Huebschmann (34)	1913	4½	M.	+	+	Peritonitis	+		+	Diverticulum found at autopsy.
4. Gramen (27)	1915	10	M.	+		Appendicitis	+	+		
5. Callender (7)	1915	19 mos.			+		—		+	Found at autopsy. Death from hemorrhage.
6. Meulengracht (49)	1918	12	M.	+	+		—		+	Death from other cause. Found at death.
7. Mueller (54)	1919	11	M.	+	+	Peritonitis	+	+		
8. Megevaud & Dunant (47)	1922	28	M.	+	+	Duodenal or intestinal ulcer	—	+		
9. Brasser (3)	1924	15	M.	+	+	Tumor or polyp	+		+	Cause of bleeding not found at operation. Diverticulum at autopsy.
10. Humbert (37)	1924	11 mos.	M.	+	+	Peritonitis	+		+	Diverticulum found at autopsy.
11. Guibal (30)	1924	14	M.	+	+	Intestinal Tuberculosis	—	+		
12. Pascale (57)	1925	41	F.	+	+	Intestinal ulcer	—	+		
13. Ulrich (75)	1925	8 mos.	M.	+	+	Peritonitis	+		+	
14. Abt & Strauss Case 1 (1)	1926	2	F.	+	+		—	+		
15. Etchegorry (20)	1926	16	M.	+		Appendicitis	+	+		
16. Kleinschmidt (41)	1927	15	M.	+	+	Appendicitis	+	+		
17. Buechner (5)	1927	24	M.			Peritonitis	—	+		
18. McCalla (55)	1927	4	M.	+	+		+		+	Not operated. Found at autopsy.
19. Jackson, A. S. (38)	1927	14	M.	+	+	Ulcer of Meckel's Diverticulum	—	+		
20. Taylor (73)	1927	17 mo.	M.		+		—		+	Died of hemorrhage. Diverticulum found at autopsy.

TABLE I—(Continued)
ULCER CASES WITH MICROSCOPICALLY VERIFIED GASTRIC MUCOSA

Author	Year	Age	Sex	Symptoms		Preoperative diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
21. Gramen (27)	1927	21	M.	+		Peritonitis	Not Stated	+		
22. Gramen (27)	1927	11	F.	+		Peritonitis	Not Stated	+		
23. Meiss (48)	1928	2	M.		+	Intussusception or Polyp	+	+		Diverticulum adherent to ileum into which ulcer had perforated.
24. Hartglass (32)	1928	4	F.	+		Appendicitis	+	+		
25. Peterman and Seeger (59)	1928	6	M.	+	+	Ulcer of Meckel's Diverticulum	+	+		Operated first for appendicitis. Intestinal bleeding continued. Diverticulum found at 2nd operation.
26. Frank (24)	1929					Peritonitis	+		+	
27. Treplin (74)	1929					Appendicitis	—	+		
28. Winkelbauer (80)	1929	2	M.	+	+	Intussusception	—	+		
29. V. Haberer (31)	1930	21	M.		+	Bleeding duodenal ulcer	—	+		Two duodenal ulcers found at operation; also bleeding ulcer in diverticulum.
30. V. Haberer (31)	1930	13	M.	+	+	Post appendectomy abscess	+	+		
31. Schmidt (64)	1930	18	M.			Peritonitis	+	+		Two ulcers found; one had perforated.
32. Edwards (19)	1930	16	M.	+	+	Peritonitis	+	+		
33. Achsner and Karelitz (2)	1930	15 mo.	F.		+	Tumor	—	+		
34. Achsner and Karelitz (2)	1930	2	M.	+	+	Intussusception	—	+		
35. Fevre, Patel and Lepart (22)	1930	7	M.	+		Appendicitis	+	+		
36. Fevre, Patel and Lepart (22)	1930	5 mo.	M.	+	+	Intussusception	+	+		
37. Cobb (10)	1931	18	M.	+	+	Appendicitis	+	+		
38. Debre (13)	1931	17 mo.	M.	+	+		+		+	

TABLE I—(Continued)
ULCER CASES WITH MICROSCOPICALLY VERIFIED GASTRIC MUCOSA

Author	Year	Age	Sex	Symptoms		Preoperative diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
39. Beuchner (5)	1931	8	F.	+			—	+		
40. Tavernier & Guilleminet (72)	1931	10	F.		+	Possible ulcer of Meckel's Diverticulum	—	+		
41. Lindan & Wulff (44)	1931	15	M.	+		Appendicitis	+		+	Operated for appendicitis. Diverticulum found at autopsy.
42. Greenwold & Steiner (29)	1931	15 wks.	M.	+	+	Perforated ulcer of Meckel's Diverticulum	+		+	
43. Greenwold and Steiner (29)	1931	10	M.	+			+	+		
44. Hudson and Koplik (Case 12) (35)	1932	5½	M.	+	+	Peritonitis	+		+	
45. Hudson and Koplik (Case 31) (35)	1932	5½	M.	+	+		—	+		
46. Vaughn and Singer (77)	1932	7	M.	+		Appendicitis	+	+		
47. Mason and Graham (45)	1932	9 mo.	M.	—	+		—	+		
48. Goetsch (26)	1932	19	M.			Intestinal obstruction	Healed	+		Ulcer had perforated and had drained 6 years previously.
49. Burger (6)	1932	7	M.	+	—	Ileus	+	+		
50. Royster (61)	1932	7	M.	+	+	Exploratory	+	+		
51. Marty and Roudie (60)	1932	7	M.	+		Appendicitis	+		+	
52. Wulff (81)	1932	16	F.				—	+		
53. Schaaf (62)	1932	7	M.	+	+	Perforated ulcer of Meckel's Diverticulum	+	+		Diverticulum 60 cm. long, contained a fluid with 40 free HCL and 70 total acidity.
54. Hudson (36)	1933	11	M.	+	+		—		+	
55. Hudson (36)	1933	6 mo.	M.	+	+	Peritonitis	+		+	
56. Dragstedt (18)	1933	17 mo.	M.	+	+	Intestinal ulcer	—	+		

TABLE I—(Continued)
ULCER CASES WITH MICROSCOPICALLY VERIFIED GASTRIC MUCOSA

Author	Year	Age	Sex	Symptoms		Preoperative diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
57. Johnston and Renner (40)	1933	18 mo.	M.	+		Appendicitis	+	+		
58. Johnston and Renner (40)	1933	15 mo.	F.		+	Ulcer of Meckel's Diverticulum	—	+		
59. Clark (9)	1933	8	M.	+	+		—	+		Multiple erosions.
60. Lamy and Mondor (52)	1933	4½	M.	+	—	Appendicitis	+	Not Mentioned		
61. Del Carril (15)	1934	2	M.	+	+		—	+		
62. Weeder (79)	1934	9 mo.	F.	+	+	Perforated ulcer of Meckel's Diverticulum	+	+		
63. Deton and Huard (Case 1) (17)	1935	18	M.	+	+	Ulcer of Meckel's Diverticulum	—	+		
64. Deton and Huard (Case 2) (17)	1935	11	M.	+	+	Ulcer of Meckel's Diverticulum	—	+		
65. Croes and Van Hasselt (11)	1935	3½	M.	+	+		—	+		
66. Cobb (see text)	1935	9	M.	+	+	Ulcer of Meckel's Diverticulum	—	+		

TABLE II

ULCER CASES. MUCOSA NOT INVESTIGATED.

Author	Year	Age	Sex	Symptoms		Preoperative Diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
1. Denecke (16)	1902	7	M.	+		Appendicitis	+		+	
2. Brentano (4)	1904	24	M.	+		Appendicitis	+	+		
3. Lawen (43)	1909	23	M.	+		Peritonitis	+	+		
4. Stern (69)	1917	2½	F.	+		Peritonitis	+	+		Large bowel mucosa.
5. Stern (69)	1917	3	M.	+	+	Peritonitis	+	+		
6. Griffith (28)	1914	19 mo.	M.	+	+		+		+	Found at autopsy.
7. Schreuder (65)	1923	8	M.	+	+	Duodenal ulcer (X-ray)	—	+		
8. Jackson, R. H. (39)	1924	10	M.	+	+	Surgical abdomen	—	+		
9. Stulz and Woringer (Case 1) (71)	1925	11 mo.	M.	+	+	Ileus, peritonitis	+		+	
10. Stulz and Woringer (Case 2) (71)	1925	11 mo.	M.	+	+		+		+	Found at autopsy.
11. Abt and Strauss (Case 2) (1)	1926	1 mo.	M.	+	+		—	+		
12. Fuss (25)	1926	37	F.	+	+	Bleeding gastric ulcer	—	+		
13. Moll (51)	1926	5 mo.			+	Intestinal polyp	—		+	Found at autopsy.
14. Kleinschmidt (41)	1927	45	M.	+	+	Tumor	+	+		
15. Shannon (67)	1928	18 mo.	F.		+	Ulcer of Meckel's diverticulum	+	+		
16. Winkelbauer (80)	1929	19 mo.	M.	+	+	Intussusception	—	+		No gastric mucosa on microscopical examination.
17. Schwarz and Daly (66)	1929	8	M.	+	+	Bleeding ulcer of Meckel's diverticulum	—	+		
18. Smith and Hill (68)	1929	14 mo.	M.	+	+	Intestinal obstruction	+	+		
19. Christie (Case 3) (8)	1931	3 wks.	M.				—			Found at autopsy.

TABLE II—(Continued)

ULCER CASES. MUCOSA NOT INVESTIGATED.

Author	Year	Age	Sex	Symptoms		Preoperative Diagnosis	Ulcer Perforated	Recovered	Died	Remarks
				Pain	Intestinal hemorrhage					
20. Christie (Case 10) (8)	1931	2 wks.	M.				—			Found at autopsy.
21. David (12)	1932	30	M.	+	+		+	+		Ulceration may have been carcinomatous.
22. Finney (23)	1932	29	M.	—	+	Ulcer of Meckel's diverticulum	—	+		No gastric mucosa found.
23. McKeen (56)	1932	53	M.	+	+	Duodenal ulcer (X-ray)	—	+		No gastric mucosa on microscopical examination.
24. Walters and Wilkins (78)	1932	20	M.	+	+	Intussusception	+		+	
25. Pouget & Tavernier (72)	1933	5	F.	+	+	Ulcer of Meckel's diverticulum	+	+		
26. Fellows (21)	1933	19	M.	+	—	Appendicitis	+	Not Stated		
27. Miller and Wallace (50)	1933	17	M.	+	+	Acute obstruction	+	+		
28. Valer, F. (76)	1934	8	M.	+	—	Peritonitis	+		+	No gastric mucosa on microscopical examination.
29. Montgomery (Case 1) (53)	1935	13 mo.	M.	+	+	Ulcer of Meckel's diverticulum	—	+		
30. Montgomery (Case 2) (53)	1935	10 mo.	M.	—	+	Intussusception	—	+		
31. Montgomery (Case 3) (53)	1935	16 mo.	M.	+	+	Ulcer of Meckel's diverticulum	+	+		
32. Montgomery (Case 4) (53)	1935	11 mo.	M.	+	+	Ulcer of Meckel's diverticulum	+	+		
33. Pasman (58)	1935			+	+	Intussusception	+	Not Stated		
34. Cobb (see text)	1935	18 mo.	M.	+	+	Peritonitis	+		+	No gastric mucosa on microscopical examination.

TABLE III

AGE DISTRIBUTION

From birth to 5th year	40	74%
Five to ten years	23	
Ten to fifteen years	11	
Over fifteen years	23	
Age not stated	3	
Total	100	

Youngest, 2 weeks. Oldest, 53 years.

TABLE IV

SEX DISTRIBUTION

	No.
Males	81
Females	14
Sex not stated	5
Total	100

TABLE V

PREOPERATIVE DIAGNOSIS

Ulcer of Meckel's Diverticulum	17
Appendicitis	18
Peritonitis	18
Intussusception or obstruction	10
Duodenal or gastric ulcer	5
Intestinal tumor or polyp	4
Acute abdomen	3
Intestinal ulcer or tuberculosis	3
Ileus	1
Not stated	21
Total	100

The seventeen cases correctly diagnosed were reported since 1927; six of them during 1935.

TABLE VI

Incidence of Pain and Intestinal Hemorrhage and the Mortality in Perforated and Non-perforated Ulcers in Meckel's Diverticula

	No.	Pain	Intestinal Hemorrhage	Died	Mortality Percentage
Perforated ulcers	55	51	36	20	36%
Non-perforated ulcers	43	29	35	5	12%
Perforation not stated	2				
Total	100	80	72	25	27%

PRESIDENT RINGER: I am now going to turn the Chair over to President-Elect Strosnider as I have to leave you to present the greetings of this Society to the Woman's Auxiliary.

DR. STROSNIDER: The next paper on the program is "Diagnosis and Treatment of Diabetes Mellitus" by Dr. Verne Caviness of the Section on Practice of Medicine, Raleigh. (Applause)

THE DIAGNOSIS AND TREATMENT OF DIABETES MELLITUS

By VERNE S. CAVINESS, M.D., F.A.C.P.
Raleigh, N. C.

INCIDENCE

The increased incidence of diabetes during the past few decades appears to have resulted not so much from an actual increase in the number of potential cases of diabetes as from a concomitant increase in longevity. Due to improved methods of treatment, many more persons live to become 45 to 55 years of age—the diabetic age. The average duration of the disease has increased from three years to twenty years or more. This single factor gives us seven times as many living diabetics per one hundred thousand population.*

Also, the medical profession has become more interested in the disease and has used better diagnostic methods since the development of satisfactory methods of treatment.

The incidence of diabetes is highest in the New England States and is higher in the United States** than in other countries. In general, the incidence appears to be lower in warmer climates. In the United States, there appears to be one diabetic for every two hundred and fifty of the population. It is to be expected that two per cent of the entire population will develop the disease at some time during life. This is enough to make us a diabetes-conscious nation.

Diabetes appears to be most prevalent in the white race and with the highest incidence appearing in the Jews. The yellow race appears to have the lowest incidence.

Physical activity, obesity, and heredity are very important factors but more study is required to determine the etiological importance of each.

CAUSE

Heredity is thought to be the chief factor in the etiology of diabetes. Many interesting observations have been made regarding heredity in diabetes, but its interest for us lies chiefly in the importance of making early diagnoses and making more intensive studies of relatives of diabetics.

Obesity is almost a constant finding as a precursor of diabetes. In many series of cases, from seven to ten per cent of cases are underweight, about

*Joslin, Treatment of Diabetes Mellitus, 5th Ed., P. 29.
**U. S. Bureau of Vital Statistics.

fifteen per cent are of normal weight, and the remainder are overweight. It is quite rare to discover a diabetic who has always been very markedly underweight. Rare exceptions occur, illustrated by my case of diabetes insipidus who later developed diabetes mellitus. The pituitary disturbances which may be responsible for the two types of diabetes are apparently only very rarely associated.

In 1889, Von Mering and Minkowski successfully removed the pancreas of a dog, and proved for the first time that sufficient loss of function of the pancreas produced diabetes. About thirty years later, Banting produced insulin—prepared from the pancreas—which has been our best crutch in the treatment of diabetes. Insulin is produced by the beta cells of the islands of Langerhans, and, in nearly all diabetics, a satisfactory metabolism of carbohydrate occurs with the use of insulin.

The pituitary gland now is recognized as an important agent in many cases of diabetes. Investigators have removed not only the pancreas of a dog, but also the pituitary gland. Such dogs developed only a very mild diabetes. Removal of the pancreas and adrenals results in a less mild diabetes. Overaction of the thyroid, pituitary, or adrenal may produce diabetes. Removal of such overacting glands improves the diabetic condition.

In papers presented before this body in June, 1926, and April, 1927,* I called attention to the frequent association of complex endocrine events at age 45-55, and especially anterior pituitary disturbances and obesity, which are often hereditary. Now, we can add the later development of diabetes in some cases. The pituitary gland undoubtedly exercises a strong regulatory effect on fat metabolism. The anterior lobe produces a blood sugar raising hormone which appears to be antagonistic to insulin and which no doubt helps regulate the actions of the pancreas. There may be a similar secretion produced by the posterior lobe of the pituitary.

The thyroid gland exercises a control over general metabolism and in diabetes excessive thyroid secretions cause excessive discharge of glycogen from the liver.

The liver serves as a storehouse for glycogen, plays an important part in the function of glycogen metabolism and it may also exert some control over the secretion of the islands of Langerhans. It is possible that there is a secretion produced in the duodenum** which either stimulates the formation of insulin or activates such a secretion.

We cannot forget the sympathetic centers in the brain stem and the effect of various drugs on carbohydrate metabolism.

It now appears that diabetes is an hereditary disease due to disturbances in the endocrine and sympathetic systems associated with changes

*Caviness, Arterial Hypertension, Transactions Medical Society of the State of N. C., 1926, P. 271.

Caviness, The Reaction of the Endocrines to Obesity and Weight Reduction, Transactions Medical Society of the State of N. C., 1927, P. 341.

**Garfield Duncan, Loc. Cit.

occurring most often at ages 45-55 and associated with overweight in adults and overheight if occurring in children.

By a careful study of every case, various endocrine dysfunctions may be discovered. The discovery and treatment of such dysfunctions will simplify and expedite the treatment of diabetes.

Occasional cases of diabetes are seen that are due to tumors of the tail of the pancreas or to pancreatitis. There are also, doubtless, many cases of pure deficiency of function of the islands of Langerhans, but evidence is accumulating indicating that the disease is usually of a much more complex nature.

DIAGNOSIS

The onset of diabetes is usually insidious; fulminating cases are rare. Polyuria is usually the first symptom. The patient complains of passing large amounts of urine too frequently during the night. Weakness is also a very early and progressive symptom. Increased thirst and hunger follow. Pruritus of the vulva or thighs of the female or glans penis and prepuce of the male frequently cause the patient to seek the first medical advice. Loss of weight appears slightly later. About this time, various skin lesions may appear, especially boils and carbuncles. Pains in the extremities are very annoying to some patients.

The first definite finding is likely to be glycosuria. This always indicates the need for blood sugar studies on which every diagnosis of diabetes depends. A fasting blood sugar of .140%, or a blood sugar of .170% at any time, is proof of the existence of diabetes. Also, a sugar tolerance curve that is higher at the end of two hours than at the end of one hour is very suspicious no matter how low the readings. Glycosuria is desirable but not essential for a diagnosis of diabetes. This will be dependent on the renal threshold. I have found the renal threshold as high as .270% to .400% in various diabetics. The higher the renal threshold, the more severe the diabetes.

Glycosuria of itself cannot justify a diagnosis of diabetes. Joslin reported* that of 9,000 patients referred to him as diabetics, 15.8% had non-diabetic glycosuria. This should serve as adequate warning against giving insulin to any patient without a careful study of the blood sugar.

Blood cholesterol studies give the most accurate picture of the fundamental clinical condition of the patient. Any disturbance of the blood cholesterol is a danger signal; a low blood cholesterol indicates an early approaching death while a high cholesterol warns of severe complications, a less speedy death and arteriosclerosis. While the normal tendency is for the blood cholesterol to remain at an average level, a high fat diet or a persistently high blood sugar disturbs the cholsterol balance. This is probably the chief cause of excessive arteriosclerosis in improperly treated diabetics.

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*Proceedings of International Assembly, Interstate Post-graduate Medical Association, North America 1930-6-330-1931.

TREATMENT

The treatment of this disease has undergone several radical changes in the past twenty years. At the present time the treatment generally is more conservative than at any time in the history of the treatment of diabetes.

We have learned that it is necessary to treat not only the disease, but the patient as well. Now, we hear very little of such radical measures as starvation or high fat diets or high carbohydrate diets.

The modern, conservative ideas as to diet are well illustrated by Joslin:* "Do not make the fat too high or the carbohydrate too low. Strike a balance. Do not try to treat the diabetic like an epileptic on the one hand or like a normal individual on the other. As for protein, use discretion." It appears that we could very well add "Be conservative and use discretion in everything connected with the treatment of diabetes."

The three primary essentials of the treatment of diabetes are: (1) Diet; (2) Insulin; (3) Exercise.

To these must be added conservatism on the part of the physician and coöperation on the part of the patient.

Diabetes differs from other diseases in that it cannot be cured, but so long as the patient will coöperate and the physician uses a rational, conservative treatment, the patient can expect to live out his individual expectancy of life and die of some unrelated condition. Often the physician will find it necessary to resort to various means to induce the patient to coöperate in the treatment. Much tact, patience, and experience are required to enable a physician to secure full coöperation at all times from any patient. Even the most intelligent patient, the patient who should have every reason to wish to prolong his life, will at times break over his restrictions. Proper instructions and advice from the physician can teach most patients to adhere to their treatment.

Being on a strict diet sounds like a trivial affair to most people—including physicians—until it is tried. Many patients develop a definite aversion to social affairs and lose their old interests because of the difficulties surrounding an impractical diet.

Diet is the most important item of the successful treatment of diabetes. Every person has a fairly definite carbohydrate tolerance, beyond which he should not eat. The physician should not lose sight of the fact that by an injudicious plan of diet for the patient, whether too high or too low a carbohydrate intake is arranged, the carbohydrate tolerance will be lowered.

The average diabetic does not seem to realize his condition. For many years, I have explained to them how many ounces of sugar are lost in their urine each day. They then can be shown that their total daily intake of sugar—often of total carbohydrate—is much less than the urinary output of sugar.

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*Joslin, Treatment of Diabetes, 5th Edition, page 21.

The patient should be given a diet that takes into consideration the existing diet, the needs of the patient for strength and for regulation of body weight.

The average adult will need from 125 to 140 grams of carbohydrate a day to prevent ketosis and give him enough readily oxidizable fuel. Some men use slightly more, but with such men the tendency is towards a reduction. Protein should be supplied in the amount of about one gram for each kilogram (2.2 lbs.) of body weight. Fat is added to make up the daily caloric requirements. The diet should contain from 20 to 30 calories a day for each kilogram of body weight depending on physical activity and body weight. If the patient is overweight, part of his excess body fat can be substituted for part of the fat in the diet. One should never eliminate all the fat in the diet. All diabetics crave fat in the diet, and usually prefer it to sweets.

Very few patients will weigh a diet. They soon learn to guess at the weight and even if they are good guessers, they rapidly forget the standards. Hence, it is necessary to use other standards of measurement. Since carbohydrate is the portion of food that gives trouble and must be computed most accurately, it is never given in concentrated form.

Standard diet forms are not applicable to all patients. In arranging a diet for a diabetic, the social status must be considered, and foods ordered that the patient can afford to buy, as well as giving foods he is accustomed to eat. The drastic restrictions placed about a diabetic diet should not be more strict than necessary. Individual diets are necessary if the physician expects the diet to be followed.

For such a diet, bread can be purchased, already sliced. The slices are of uniform weight, so the patient need only count the number of slices. A pint of milk has a constant weight and carbohydrate percentage. Oatmeal can be measured in tablespoonfuls with reasonable accuracy. Fruits of average size can also be used. While these measures are not of absolute accuracy, they are far more accurate than the average guess work.

Quite an effort may be required on the part of a physician, but if his patient, without being told, realizes that the physician knows diabetes, diets, and its other treatment, coöperation will be much easier.

The second essential of treatment is insulin. Insulin has three indications in the treatment of diabetes:

First, it enables a disordered metabolism to utilize enough carbohydrate in the diet to prevent acidosis.

Second, in the event of the development of acidosis, and perhaps coma, insulin causes the metabolizing of enough carbohydrate to burn up the toxic products of incomplete metabolism and restore the reserve alkalai of the blood to normal.

Third, insulin is antagonistic to secretions of the pituitary, thyroid, and

adrenal glands, so it probably inhibits some of the ill effects of dysfunctions of one or more of the endocrine glands.

Next to diet, insulin is our most valuable ally. It is indeed a useful ally, but it is not to be looked upon as the whole treatment. It is only one link in a strong chain,—a chain that must carry a maximum stress at all times. If any link is defective, the remainder of the chain loses in value. As the blood sugar rises in the course of the disease, the sugar concentration in all the individual body cells also increases, which means an elevated osmotic pressure throughout the body. But if by any means the blood sugar level is too rapidly lowered the osmotic pressure in the vascular system is lowered much more rapidly than in the body cells. This is perhaps the cause of death in many cases receiving large doses of insulin.

The body cannot use very much artificially supplied insulin without a corresponding drop in blood sugar. Hence, only so much insulin should be given as will allow the blood sugar level to fall gradually. In case of coma or severe diabetes, glucose may be given to buffer the action of insulin while the toxic products of metabolism are being burned.

There may be some reason for the body to require a higher blood sugar than the normal. I am sure that there are cases of myocarditis, arteriosclerosis and other degenerative diseases that belong in this category. I doubt if such cases should be required to keep a blood sugar level below .150%, and if the blood sugar level has been very high over a long time, it should be lowered to this level only very slowly and gradually. Such cases are usually elderly and we should remember that the older a person is, the less damage he is likely to suffer from diabetes.

Ordinarily, diabetics should have their blood sugar levels reduced gradually to normal, that is .090% to .120%, and it should be kept at that level. Beware of getting the blood sugar level too low. Patients suffer greatly from hypoglycemia and while it may be relatively harmless, various patients experience varied sensations of impending doom: indefinite, vague uneasiness which has been described as the feeling of a guilty conscience. Symptoms vary from this to convulsions, unconsciousness, and death. At least nineteen fatal cases from insulin reaction* with hypoglycemia have been reported in the literature. No one could guess how many cases have not been recognized or for other reasons not reported. Unfortunately, after surviving severe insulin shock, some patients may refuse to use insulin.

When carefully supervised and checked by blood sugar tests, insulin may safely be used in any necessary dose. Care must be exercised not to give too large a dose. Ordinarily, a single dose should never exceed twenty units, but may be repeated as often as may be necessary. There are cases in which overaction of the thyroid, pituitary or adrenal glands decreases the efficiency of insulin secreted or injected to such an extent that much

*Bowen and Beck: Annals of Internal Medicine—6, 1412-1933.

larger doses may be required. In coma, I have given twenty units every hour or two day and night, and with very satisfactory results. The dose of insulin will vary with the individual, and no definite rules can be followed. Each dose must be studied, and the diet and insulin dose, if insulin be needed, adjusted to the needs of the patient.

In computing insulin dosage, it is well to remember that no patient is likely to need more than eighty units a day. Part of this will be supplied by his own pancreas, and the remainder must be supplied artificially. In arranging the insulin dosage, it is also well to remember that allowance must be made not only for the carbohydrate eaten, but that perhaps as much as 58% of protein and 10% fat may be available for conversion into carbohydrate and require insulin for metabolism.

If only a single dose of insulin is to be used, it should usually be administered before breakfast; if two doses, they should usually be given before breakfast and supper; if three doses, they should be given before the three meals. If a fourth dose be required, it may be given at bedtime, or occasionally early in the morning.

Insulin should be given about half an hour before meals and exerts its maximum effect from one to two hours later. As a result, blood sugar curves vary greatly, especially through the night. Hagedorn, of Copenhagen* has devised a new, slower acting insulin, which has not been placed on the market, but is still in the stage of clinical trial. At various clinics,** its use has been highly satisfactory. I have found it to be quite an improvement over the old insulin, especially for keeping the blood sugar at a constant level throughout the night.

Insulin reactions should receive symptomatic treatment. A mild reaction in a patient under close observation may require only a few minutes rest, either sitting or recumbent. Severe reactions may require a drink of milk or orange juice. More severe reactions may require intravenous injections of glucose. However, the most satisfactory treatment for insulin reactions is their prevention. This is quite possible by proper study of cases and conservative treatment, coupled with adequate coöperation between the patient and the physician.

Exercise is a very important part of the treatment. Metabolism of glycogen takes place in all parts of the body, a large part of the process occurring in muscles. Exercise must be considered in arranging insulin dosage. A patient in bed will require more insulin than a patient out of bed. On discharge from a hospital, further decrease in insulin dosage is required.

Exercise with insulin tends to lower the blood sugar, so except for initial instructions for instituting treatment, and for complications, I do not favor hospitalization of diabetics. Exercise should be regular, well ordered, and suited to the individual. Too much exercise may produce insulin shock.

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*Hagedorn-Protamine Insulinate. Journal A. M. A., January 18, 1936, Vol. 106, page 177.
**Root, White, Marble, Stotz-Clinical Experience With Protamine Insulinate, Journal A. M. A., January 18, 1936, Vol. 106, page 180.

COMPLICATIONS

Complications of diabetes result from the breaking of one or more links in the chain of treatment. The treatment of the various complications consists of a rational, conservative, symptomatic application of the cardinal principles of medicine as applied to the treatment of diabetes in general. Radical measures are out of place and likely to prove disastrous.

The heart often does not receive adequate attention either while blood sugars are being reduced too rapidly or as an important element in the causation of coma.

No part of the body is immune to the effects of diabetes and often may enter actively into the operation of various vicious circles to retard recovery or hasten death.

Coma is perhaps the most frequent complication, and it stimulates many other conditions. The diagnosis is easy if a urinalysis and a blood sugar determination are made. The treatment is then a rational conservative treatment for diabetes with symptomatic variations. Surgery and obstetrics are usually possible and if conservative men use conservative measures, the results will usually be reasonably satisfactory. Even then, it is well to remember that the patient and not the complication or the diabetic condition must have prime consideration.

PROGNOSIS

Until we learn more regarding the cause of diabetes, the prognosis will continue to be guarded. No one can tell whether a full knowledge of the subject would improve the prognosis.

CONCLUSION

At present, we have methods of treatment that yield far more satisfactory results than were thought possible fifteen years ago. Conservative treatment appears to enable a patient to live his full individual expectancy of life.

Careful treatment with diet, insulin, and exercise, in mild cases enables some of our patients to dispense with the use of insulin and maintain a normal blood sugar by a rigid diet and systematic exercise. But this cannot in any sense be interpreted as a cure of diabetes. All cures of this disease are open to suspicion, and it is doubtful if cures will be possible until we are able to exert better control over the sympathetic nervous system and the various endocrine glands.

President Ringer: I am asked to call your attention to the tuberculosis clinic that is going to be presented from four to five p.m. today in the Arcade Building directly across the street from this building, Room 296. Arrows will point the direction. The entrance to the Arcade is just across from the front door of this hotel. There are going to be various presenta-

tions, each of ten minutes, on various phases of tuberculosis, together with presentations of clinical cases. I hope that this clinic will be largely attended.

It is now my great pleasure to present our guest speaker, Dr. Albert McCown, Director of Maternal and Child Health Division, of Washington, D. C., who will speak to us now on an "Educational Program for Pediatrics."

Dr. McCown! (Applause)

Dr. Albert McCown: Mr. President, and Members of the Medical Society of the State of North Carolina: The non-arrival of the official program before I left Washington left me somewhat uncertain as to the exact limits of my topic and so my topic, though embracing pediatric education, will be somewhat more comprehensive. In this respect I hope it won't be like the hoopskirt which covers everything without touching anything.

MATERNAL AND CHILD HEALTH SERVICES UNDER SOCIAL SECURITY ACT

(Address before the North Carolina State Medical Society, Asheville, N.C., May 5, 1936, by Albert McCown, M.D., Director Division of Maternal and Child Health, Children's Bureau.)

In conformity with Title V, part one, of the Social Security Act (Grants to States for Maternal and Child Health Services), 47 States, the Territory of Alaska, the District of Columbia and the Territory of Hawaii, have submitted State plans for maternal and child health services. Of the 50 plans submitted, 42 have been approved and are in operation. Only one State has not submitted a plan, and that because no State funds were available for matching purposes. It is anticipated that by the end of the fiscal year June 30, 1936, all 48 States, the District and Territories will have plans approved and in operation.

The first step has been taken. State plans have been submitted by the State health departments. Forty-two of these plans, among them that of North Carolina, have been approved by the Chief of the Children's Bureau, and have gone or are ready to go into operation. This brings us to the second and equally important phase—personnel, activities and methods of administration. A plan does not operate automatically and just as a stream can rise no higher than its source, so these plans for maternal and child health services will be productive insofar and no farther than the interest, ability and vision of the personnel engaged. And you, members of the Medical Society of the State of North Carolina, are part of this personnel. To explain as far as I am able the intent of the Act and to solicit your coöperation are the purposes of my appearance here in response to your courteous invitation.

To be successful, I believe, the State plan must comprehend at least three fundamentals:

1. It must be a long-range plan. This is no relief or emergency measure, even though made especially necessary by an economic emergency. Tangible results may be difficult to demonstrate at first, but a sound plan will provide for future developments as well as present needs.

2. The plan to be successful must be administered through personnel qualified by training and experience. In this respect, may I quote the recommendations of the State and Territorial Health Officers, and also those of the advisory committee to the Children's Bureau, composed of representatives, physicians, dentists, nurses and other health workers.

"It was the consensus of opinion that there should be in the State department of health a division of maternal and child health or a comparable administrative unit, coördinate with all other major administrative divisions, with a director responsible to the health officer. It was further suggested that the director should be a physician and that additional medical staff for consultation and advisory service should consist of full-time or part-time physicians with training and experience in either maternal or child health work, preferably both. It was suggested that a full-time dentist be added to the medical staff and, furthermore, that there might be regional advisers to professional groups in the fields of pediatrics, obstetrics and dentistry. The committee further suggested for consideration by the State agencies that the qualifications for the director of the division of maternal and child health be as follows: (1) graduation from a recognized school of medicine; (2) thorough training in pediatrics or obstetrics or both, and not less than one year's administrative experience in the field of maternal and child health; (3) eligibility for examination for medical licensure in the State where service is to be rendered; (4) preferably, training in the fundamentals of public health; (5) preferably, at least one year in the private practice of medicine.

"In view of the fact that the number of qualified persons available for positions of this kind is probably not large enough to meet the need, the committee approved the use of funds for the training of personnel.

"As regards participation in a maternal and child health program by local or other qualified physicians, the committee was of the opinion that such services should be arranged for jointly by the local health department and the local medical association, with the advice of the director of the State division of maternal and child health.

"It was the opinion of the committee that as far as possible the maternal and child health work in any given area should be carried on by local qualified physicians and, where such are not available, that other arrangements be made in local maternal and child health centers.

"The committee also agreed that the medical men taking part in this program should be paid for their services.

"The development of advisory committees for the purpose of facilitating coöperation of the State health department with medical, nursing and welfare groups and organizations was discussed. It was the sense of the committee that the purpose of this provision of the act could best be met by the formation of one or more advisory committees on which there are representatives of medical, nursing, welfare and other interests concerned.

"In outlining the scope of the local program the question of supervision of maternal and child health services was discussed as well as the State and local educational program to be carried out for professional and lay groups with the assistance of State and county medical organizations. The coöperation of local medical, dental and nursing organizations and of all public health and welfare agencies in the local area was strongly advised. As required by the act it was pointed out that provision must be made for extension and improvement of local, maternal and child health services.

"The advisory committee agreed that with these interpretative additions the report of the State and Territorial Health Officers represents an admirable statement of the essential features of a State program and recommends that they be given very careful consideration by all State agencies in the development of their plans.

"The committee emphasized strongly the importance of the educational features of the program and suggested that the divisions of maternal and child health services in the several States might well be coördinating agencies for all health education concerning mother and child.

"The committee heartily endorsed the publication of a brochure that is in process of preparation by the Children's Bureau relative to its organization, general functions and aims, with special emphasis on the supervision of its medical activities by physicians, and it further recommended that the medical profession be kept constantly advised of the progress and development of these activities through the medical press.

"The submission of reports by States, both those that have to do with financial matters and also with activities concerning maternal and child health programs, was discussed. Reference was made to the work of a committee of the United States Public Health Service and the Children's Bureau which is now preparing a joint report form, and the committees suggested that coöperative research projects could be well handled in this way.

"Throughout the meeting of the committee, emphasis was placed repeatedly on the advantages to be gained from coöperation with medical, nursing and welfare groups and organizations."

By the terms of the Act, the Children's Bureau is specifically prohibited from action in regard to selection, tenure of office or compensation of personnel participating in the plan. This, I feel, is a wise provision. The obligation and responsibility is left where it belongs, that is, with the

State. May I add parenthetically that from what I have seen of the work of the North Carolina State Board of Health under Dr. Reynolds, the Director, and Dr. Cooper of the Division of Maternal and Child Health, I know the responsibility is fully realized. The Children's Bureau has no question of the quality of the personnel already selected or to be selected in this State.

3. In addition to being a long range plan administered by qualified personnel, it must, to be successful, secure and hold the coöperation of the medical profession, of the dental profession, of the nursing profession and of the various official and lay organizations involved in a unified health program.

In the language of the Act, the appropriation is authorized for the purpose of enabling each State to extend and improve as far as practicable under conditions in such States, services for promoting the health of mothers and children, especially in rural areas and in areas suffering from severe economic distress. It is further stated that the State plan must provide for the extension and improvement of local maternal and child health services administered by local child health units. This is where you, the local practicing physicians of North Carolina, enter the plan. The plan is formulated in Raleigh, and grants-in-aid are made in Washington, but it is only as you in the local communities take this plan, understand it and coöperate in its operation that the plan will truly function and the funds be well spent. What the program will be in a local community depends on the financial resources and public health awareness in such a community. Emphasis may well be placed on the development of certain minimal health facilities for mothers and children otherwise unable to procure such services, and on the development of an educational program for professional and lay groups in the fundamentals of adequate care for mothers and children.

In respect to the educational program the Children's Bureau encourages the use of Federal grants-in-aid. In more than half of the plans approved the States are contemplating educational services to physicians through institutes, refresher courses and other means of keeping the physicians in touch with latest medical developments in obstetrics and pediatrics. This type of activity is familiar to you physicians of North Carolina through the splendid work done by Dr. McCord in obstetrics. I know Dr. Cooper is planning an extension of these courses in both obstetrics and pediatrics.

The State plans for maternal and child health services and education vary widely in the several States. We welcome this variation being sensible to the fact that as health needs and health facilities differ in the several States so must the State plans differ to meet these needs.

In many State plans the educational program carried on through pediatricians and obstetricians of outstanding professional and teaching ability comprises three parts:

1. Lectures on the fundamentals of pediatrics and obstetrics with moving pictures and lantern slide demonstration.

2. Case demonstrations and discussions.

3. Public health meetings for lay instruction.

To what extent this full program can be carried out in a given community will best be left to the discretion of the local county medical society and the visiting lecturer.

We of the Children's Bureau are definitely encouraged at the progress made possible in the States through grants-in-aid in adding qualified personnel to the State staff. In June 1934 there were 22 states with full-time directors of maternal and child health. In 26 there were no directors and in 17 there were no divisions of maternal and child health in the State health department organization. Today, in the 42 states with plans approved, all have or soon will have bureaus or divisions of maternal and child health as major divisions of the State health department under physicians as directors. In many cases, and this is especially true of states adding new personnel, the directors are pediatricians or obstetricians. The staff frequently includes other pediatricians, obstetricians and dentists. Public health nurses for maternal and child health work are either included under the division of maternal and child health or where there is a separate bureau of public health nursing, giving a generalized service, are assigned to the division of maternal and child health for State and local consultation service.

Local plans for maternal and child health services should be made and carried out under medical direction and where possible under pediatricians and obstetricians. Local practitioners may be employed for part-time services. In many states the outstanding pediatricians and obstetricians have consented to act in a part-time capacity in assisting the State in the formulation and operation of its plan.

Demonstration services as required by the Act cover a wide range of activities, such as maternal health education, obstetrical service for examination and consultation and prenatal delivery and post partum nursing care. In the field of child health a wide range of activities including health conferences, nutritional and dental studies are contemplated. In Ohio the State health department and hospital obstetric society of Ohio are coöperating in a study of maternal deaths in Ohio hospitals. In Arizona a mobile tuberculosis unit is to give diagnostic and advisory service on children referred for treatment. In Alaska where the incidence of tuberculosis is high, a special study through tuberculin skin testing and follow-up will be made. In California a special demonstration in maternal and child health among the Mexican population will be undertaken employing Spanish speaking physicians and nurses. In the same State public health nurses will be assigned to follow migratory agricultural workers to protect the health of mothers and children. In Maryland in a county where 50 per cent of the births are attended by midwives, two public health nurses

will be put on to demonstrate coöperation with physicians and supervise more closely the work of midwives. In Rhode Island a dental hygiene demonstration is planned in coöperation with school departments and nursing organizations through lectures and demonstrations of dental prophylaxis. In Oklahoma a generalized health program with emphasis on maternal and child health under a pediatrician from the Children's Bureau will be undertaken in coöperation with the United States Public Health Service, the Indian Service, the Oklahoma State Health Department, and the Children's Bureau.

SUMMARY

1. The plan for maternal and child health services is a State plan. The Federal government does not propose to substitute something new for something old. The aim of the grants is to supplement, the purpose is to enable the State of North Carolina to extend and improve its existing services to mothers and children.

2. Funds from Federal grants are used to pay part of the cost of the program. May I reiterate that the Federal government participates but does not make the plans. The Children's Bureau has responsibility for approving the plan as submitted. Otherwise, its role is consultative. In addition the Children's Bureau will conduct certain special demonstrations and research and will furnish reports so that the results of maternal and child health activity in the several states may be made available.

3. The program, then, is one of health education, health services and health investigations depending for its success on understanding and coöperation among all groups interested in the health and welfare of mothers and children.

President Ringer: Members of the Society, this concludes our morning session. Tomorrow morning there will be another General Session in this room, beginning at ten o'clock.

The sections meet this afternoon and tomorrow afternoon, and remember, all those going to the various luncheons are to get their tickets at the Registration Desk.

Dr. F. R. Taylor: Might I have just a few words before the meeting breaks up?

President Ringer: Yes, sir. Come up here.

Dr. Taylor: As a member of this organization, I would like to say that this Society has done something a little better than it has ever been done before in the world. I think it not unfitting that it should be brought to your attention. Dr. Johnson hasn't any inkling of what I am going to say, but I am going to say it just the same.

He has recently come out with a book, which, in its field—in my opinion—there is nothing comparable to, "The True Physician." Some of you may have seen Dr. James K. Hall's comments on it in the last

Southern Medicine and Surgery. I owe a great debt to Dr. Hall because he made me order the book at once and I have read every word of it.

I would like to say that in my medical library there are three books that stand out above all others: Osler's Equanimitas and other Addresses; the papers and speeches of Dr. John Chalmers Decosta, and The True Physician by Dr. Wingate M. Johnson.

I should like to read the table of contents to show you the type of subjects it covers: Foreword, The Challenge of Medicine, Interneship, Location and Type of Work, Early Days of Practice, Routine of Practice, The Doctor a Student, The Doctor as Citizen, The Business Side of Practice, Contacts with the Law, The Principles of Medical Ethics, The Personal Side of the Doctor, The Physician's Reading, and Afterword. It is published by the Macmillan Company. It is worth far more than most medical books and it costs far less, only $1.75.

I personally think that Macmillan missed a trick in not having a booth here and having it on exhibit because it would have sold like hotcakes. Fortunately, it can be ordered through any book store anywhere, and I am eternally thankful that I have ordered it and read it and I can only advise you to do the same. (Applause)

President Ringer: Gentlemen, we stand adjourned.

. . . Whereupon the session adjourned at twelve o'clock, noon. . .

DISTRIBUTION OF SILICEOUS DUST PROBLEM

April 1936

RED NUMERALS indicate the distribution by county of the 165 miscellaneous plants, mines, and quarries originally listed for survey. Subsequent information has greatly increased the number of plants in this classification. Establishments covered thus far by survey are marble and granite quarries and cutting sheds, brick and tile plants, mirror manufacturing establishments, sand and gravel quarrying, concrete and asphalt mixing, mica products, mica, kaolin and feldspar mining, feldspar milling, talc mining and milling, machine shops and foundries, asbestos textile plants, tin mining, gold mining, copper mining, storage battery manufacturing, lead smelting, auto body manufacturing, aluminum smelting, road construction, rubber products, chemical products.

YELLOW lines bound that portion of the state that lies within the gold belt of the Southern States. The solidly shaded areas denote present active mining operations.

ORANGE shading denotes the areas in which mica, feldspar and kaolin mining operations are in progress.

BLUE lines denote the location of extensive granite quarrying.

GREEN shading (Cherokee and Moore Counties) denotes the location of talc mining operations.

BLACK shading (Moore and Lee Counties) denotes the location of coal mining operations.

VIOLET shading (Lincoln County) denotes the location of tin mining operations.

BROWN cross hatch shading denotes the area in which peanut cleaning plants are located.

RED with purple border (Swain County) denotes location of copper mining operations.

SECOND GENERAL SESSION

President Paul Ringer, Presiding

Wednesday, May 6th, 9:00 A. M.
(Ball Room, Battery Park Hotel)

Joint Session of Medical Society of the State of North Carolina, and the State Board of Health

S. D. Craig, President State Board of Health, Presiding

Meeting called to order by Dr. Ringer.

THE CONSERVATIVE TREATMENT OF PELVIC INFECTIONS

By Dr. Bayard Carter, Durham
From Section on Gynecology and Obstetrics

According to Gellhorn infections of the female pelvis are usually due to bacterial causes and chemical, thermic or mechanical causes are relatively so infrequent that inflammations and infections may be considered as synonymous terms. No practitioner can fail to recognize that pelvic infection is one of the most common causes which brings the female patient to his care. The rapidity with which infection may spread through the entire pelvis must be stressed. Upon the doctor's attitude toward these pelvic infections depends in great part the physical and psychic future of the patient.

In early times operation was the immediate method of treatment. Of late years, conservatism has come forward to claim first place in the treatment of pelvic infections by eminent gynecologists and obstetricians. This form of conservative therapy has been of inestimable benefit to the patient and of incalculable benefit to the status of the medical profession.

The two most common types of pelvic infection with which a physician has to deal are first, puerperal infection, either postabortal or postpartum, and second, gonococcal infection.

Puerperal infection is a subject which requires independent consideration. We cannot pass on to the real topic of this presentation which is to deal with the treatment of gonococcal infection of the pelvis with especial reference to conservative treatment in contrast to operative procedures in dealing with the infected cervix, the uterus, tubes, ovaries and parametrium, without mentioning in passing some of the principles we learn from treating puerperal infections—principles which may be aptly applied to gonococcal pelvic infection.

We know that puerperal infection is wound infection due to inoculation of puerperal wounds with organisms. We know that the best treatment is prevention and that prevention may be forwarded by conservative obstetric practice. In puerperal infection many factors such as the type and viru-

lence of the infecting organism, the portal of entry and the path of spread of the infection, the local resistance of the tissues and the constitutional immunity of the patient influence the establishment and spread of the infection or prevent its occurrence. Further we are familiar with efforts to find a "cure" for the disease. Among the many methods of treatment used may be briefly listed rest, efforts to maintain the resistance and nutrition of the patient, proper elimination, transfusions, immuno-transfusions, prophylactive immunization attempts by the use of vaccines and sera, fixation abscess, the use of antiseptics by vein and by local application, the use of nonspecific protein therapy and many others. In short, there is no specific cure. In any diseases liable to spontaneous cure it is difficult to evaluate the result of any one type of therapy or any combination of various types of therapy. One fact we have learned and that fact is that there is no operation for puerperal infection. It is true that at times digital curettage may be necessary and that drainage of pelvic abscesses by the most conservative anatomic route may aid the patient in combatting the disease by her own powers of resistance.

We feel that the treatment of gonococcal infection of the female pelvis may be placed on a higher standard of efficiency if more conservative and painstaking efforts are made in treating the disease as an infection which will in most cases respond to conservative forms of therapy. In the acute gonococcal pelvic infection I know of no single operative procedure which is indicated unless local abscess has formed and drainage by the most conservative anatomical route is indicated.

ACUTE INFECTION

In the acute stages of gonococcal pelvic infection all of our efforts have been directed towards a form of therapy described by Polak as "intelligent inactivity." Absolute physical and sexual rest stand first in the treatment. All efforts are made to prevent upward extension of the disease. During this stage the use of nonspecific protein therapy, the use of warm sitz baths and of the actual "hot box" therapy stand as sensible measures. The old established principles of increasing the resistance of the patient, of favoring proper elimination, drainage and dryness for the infected parts should not be forgotten. The principles of treatment in the acute stages of infection have been so well set forth by eminent authorities that I would not presume to repeat them here. We admit that we employ no routine therapy on patients. We have tried sera, vaccines, filtrates, chemotherapy, hydrotherapy and other types of treatment. In none do we feel that we are giving the infection a chance to ascend in the pelvis.

CHRONIC INFECTIONS

In the chronically infected patients we make our greatest mistakes in looking to operative procedures as our first method of combatting the signs and symptoms of the disease.

The operative treatment of the chronically infected cervix in a woman in the childbearing age requires close scrutiny. The two most common operations performed upon the chronically infected cervix are (1) cauterization with the actual cautery and (2) either repair or amputation of the cervix. A word of caution is necessary in regard to these two procedures. Before cauterization or repair are performed the cervix should have careful preoperative treatment. Often during the course of this preoperative care, carefully and conscientiously given, we find such marked improvement in the cervix that no operation is necessary. The main points in the care of the chronically infected cervix may be listed as raising the resistance of the patient, heat and dryness to the infected part, antiseptics and adequate drainage. These principles as stated above have not been abandoned in the treatment of other infections and we see no reason to abandon them in treating the infected cervix. We agree with Hunner that at least 4 to 6 months should elapse between the time of the acute infection of the cervix and the use of the actual cautery on the cervix. In the chronic stage we dry the vagina and the cervix carefully and often introduce hot air into the vagina to insure dryness. We then touch the cervical canal with silver nitrate solution and place a tampon with boroglycerine on it against the cervix and the vault. The tampon is removed by the patient in the morning and the patient takes warm saline douches, at low pressure, morning and night. On the day of coming to the office she again takes a saline douche. The cervix is again dried carefully. All small cysts are ruptured and the canal and cervix are touched with 10 per cent silver nitrate.

Under this form of "depletion" therapy the improvement is so marked that rarely do we have to resort to operative procedures. By this care we feel we prevent such tragedies as pelvic peritonitis or parametritis following cauterizations or trachelorrhaphies—types of cases we see each year. We also feel that we reduce to a minimum the operations upon the cervix during the childbearing age.

We have felt that needless laparotomies are often performed upon patients suffering from chronic infection. In treating these cases patience and conservative therapy will often give better results than will operative therapy. Many of these patients have never had a true prolonged effort at conservative therapy. It is in this type of patient that we have found our respect renewed for nonspecific protein therapy and the use of heat by means of the Elliott bag.

One of the commonest operations performed upon the female pelvis is some form of hysteropexy—i.e., suspension. This type of operation is usually done for backache, menstrual irregularity or pelvic pain. We have abandoned the operation in that we cannot be convinced of its need.

There is no prolonged pelvic inflammatory disease without some involvement of the uterosacral ligaments and the surrounding pelvic tissues. We have learned that by treating the patient with a retroverted uterus, with backache and pelvic pain as a patient with probable pelvic infection,

that we in most cases cure the backache and pain even though the uterus may remain in retroversion. We believe that most of the symptoms attributed to the retroversion are due to the infection of the uterosacral ligaments and the parametria and that once we have "cured" the infection that reposition of the uterus to the "normal" position is possible in almost every case by means of manual replacement or postural exercises. In short we see each year many women who are literally "physical and psychic wrecks" who have undergone one or more pelvic operations without relief of the pelvic pain or backache. In some of these patients we find sacro-iliac disease, in other ureteral strictures but in the majority pain about the uterosacral ligaments and at the bases of the broad ligaments. The responses to conservative therapy force us to admit that it should receive first place in any form of treatment.

In the management of patients with persistent adnexoperitonitis we have followed the same principles as those stated by Cooke in his recent estimable paper. No operation is performed on patients who show evidence of active infection. The criteria used for evidence of active infection are the fever curve, the leukocytic response, the sedimentation rate and the febrile response following a thorough pelvic examination. In those patients in whom abscesses form we drain the abscesses by the most conservative anatomic route, i.e., anterior or posterior colpotomy or by extraperitoneal approach along Poupart's ligament. Adjunctive therapy consists of high vitamin and caloric diet, posture for drainage, proper elimination and forced fluids. Nonspecific protein therapy and the Elliott bag therapy are also used. We feel that following these operations for pelvic drainage no laparotomy should be done because the patients do better under conservative therapy than under operative therapy. It is gratifying to note how many of these patients respond to conservative therapy and literally "cure" themselves by their own powers of resistance.

RE-INFECTION

The failure to "cure" gonorrheal infection in the female is often due to the fact that we fail to treat her partner or partners in sexual intercourse. In short we simply continue to treat re-infection. The inability of the physician to control and to eradicate this course of re-infection is of concern to all of us. We have been singularly impressed by husbands who readily admit having contracted gonorrhea at some time in their lives, who state that they were treated for the diseases and were told that they were cured of the disease. Upon close questioning we find that the treatment given was usually some medication by mouth, a few urethral irrigations and the assurance that a cure had been accomplished. No subsequent follow-up examinations were made. We know that under prolonged and strict treatment of the male full cures are promised by few doctors.

Another source of so-called re-infection is the woman herself. After prolonged and painstaking therapy we may find the cervix clean and

healthy, the uterus, tubes, ovaries and parametrium free of infection so far as clinical examination may determine. If, however, we neglect the urethra as a possible focus we often find that our efforts fail and that re-infection of the entire genito-urinary tract may again manifest itself. The care of the urethra includes the eradication of infection in Skene's glands, the peri-urethral glands. The ducts of Skene's glands may be readily exposed and 2 to 10 per cent silver nitrate solution may be injected directly into them by means of a blunt hypodermic needle. If this simple method fails to give clinical cure the ducts may be opened by the electric needle or a sharp pointed cautery. For persistent infection in the urethra patience is required. Local treatment of the urethra is carried forward under direct vision by means of a Kelly endoscope. Numerous solutions have been employed in treating this chronic urethritis but 5 per cent silver nitrate in our opinion gives good results.

The vulvovaginal or Bartholin's glands often become secondarily infected. It is our practice to *excise* the glands in chronically infected patients in that we consider the focus of infection dangerous to the success of our continued therapy.

RECTAL GONORRHEA

There is also no doubt that we have been neglectful of another focus of great significance in the problem of re-infection. Rectal gonorrhea in the female is much more common than is generally believed. Clements and Hughes found in a series of 100 female patients under treatment for gonorrhea of the genito-urinary tract, gonococci in the rectal secretions of 69 patients. In part this rectal infection may be prevented by simple hygienic measures during the acute and the sub-acute stages of gonococcal infection. Local cleanliness and dryness of the perineum and anal regions will do much to protect the rectal mucosa from infection. It should not be necessary to mention the importance of withholding rectal examinations on all patients in the acute or subacute stage of the disease. In the examination of any patient under no circumstance should the same glove used for vaginal examination be used for rectal examination until it has been thoroughly sterilized.

The treatment of rectal gonorrhea may be undertaken by instillations of 30 cc. of 5 per cent mild silver protein twice a day or by irrigation with acriflavine hydrochloride, 1:5,000. Good results are reported for each method. Care should be taken not to injure the rectal mucosa by the catheter which is usually used for the instillations.

THE QUESTION OF CURE IN GONOCOCCAL INFECTIONS

To be able to give the patient assurance of a "possible" or "tentative" cure we have made the following stipulations:

(1) The discharges from the urethra, Skene's glands, Bartholin's glands, cervix, vagina and rectum must be definitely and permanently free of gonococci;

(2) Smears should be taken following menstruation for three successive months and following intercourse in that at these times gonococci are more liable to be found in the secretions;

(3) If after the use of 5 to 10 per cent silver nitrate solution in the urethra and applied to the cervix and to the cervical canal—the smears taken in 24 hours are negative for gonococci;

(4) If after the use of hot box, Elliott bag or diathermy the smears taken in 24 hours are negative for gonococci;

(5) If after the use of non specific protein therapy, or gonococcal filtrate no evidence of latent infection is obtained either by general examination or by bacterial study.

As stated in the brief discussion of therapy none of the numerous methods of treatment is absolutely sure of results. In the effort to give the answer to the question "Is the disease cured?" it is well to persist in all the so-called "provocative" measures listed above in an effort to answer the one question in which the patient is interested.

RESULTS

There are at present 46 women who have persisted over a period of four years in their visits to us in an effort to find an answer to the question "Am I cured?". Many others could not be included in this series because of their failure to return either for continuation of therapy or for repeated checking. All 46 patients had definite gonococcal infection—infection proved by smear and cultural methods. Of these 46 patients, 34 are married and 12 are single. Of the married group full coöperation of the husband was obtained in all but two cases although much perseverance, tact and smoothing of masculine indignation were necessary. In the 32 husbands who submitted to examination gonorrhea was found in all and treatment instituted by urologists or competent family physicians. In the 12 single women who have continued to come for periodic check we were able to send 11 of their partners in intercourse to competent men for treatment.

Of the 34 married women, 30 had definite infection of vagina, cervix, uterus, tubes, ovaries and parametria. In four patients the infection remained localized in the vagina, cervix and urethra and at no time were these symptoms or signs suggestive of adnexal disease. One patient with generalized pelvic infection came to major operation. She was a white para 1-0-1, age 32, whose husband had contracted gonorrhea four years prior to marriage, and who had been told that following six weeks of medication by mouth and urethral irrigations that he was cured. Under routine vaginal treatments, heat therapy and nonspecific protein therapy the patient rapidly improved in general and the organism could not be removed from any of the urethral, vaginal, cervical or rectal secretions. There persisted, however, an obstinate form of adnexoperitonitis and an inflammatory thickening of the parametrium on the right side. In the right side there could also be felt a large tubo-ovarian mass. Conservative measures were

employed over a period of 7 months. The patient returned by ambulance with such profuse vaginal bleeding and such a marked anemia that following transfusions laparotomy was performed and right salpingo-oophorectomy, left salpingectomy and supravaginal hysterectomy were performed. This is the only patient operated upon—an operative incidence of 2.94% for this small series.

Of the 12 single patients none was operated upon.

Of the 34 married women four have had, since treatment was started, normal full term deliveries with no complications in the puerperium. Thirty-two are symptom free and by no provocative measures have we been able to demonstrate the gonococci in the secretion of the urethra, cervix, vagina or rectum. Clinically we class them "cured." One is listed as doubtful cure for despite the disappearance of the gonococci from the secretions she still has symptoms and findings suggestive of infection of the parametrium and of the uterosacral ligaments. One patient returned but five months ago after being symptom free and free of gonococci for almost a year with either a re-infection or an outpouring of organisms from some focus in the genito-urinary tract which our therapy had not eradicated. The same type of therapy will be started again with the hope that we may be able to clear her of the infection. It need not be said that many of the patients who did not return were probably discouraged by the protracted treatments necessary for "cure." Many of them were doubtlessly operated upon elsewhere.

CONCLUSIONS

Conservatism and patience will do much to improve the treatment of gonococcal pelvic infection. In the acute stages a policy of "intelligent inactivity" should be sensibly employed. Eradication of foci of infection is often difficult and the results disappointing even after laparotomy. Caution is advised in operating indiscriminately upon the chronically infected cervix without adequate preoperative study and treatment.

There is no operation for gonococcal pelvic infection in its acute stages. Careful study and continued therapy will do much to decrease the incidence of pelvic operations in the female. Careful treatment in our opinion will reduce to an unrecognizable minimum the incidence of operation for retroversion of the uterus and backache, by freeing the patient of residual infection about the uterosacral ligaments and in allowing for manual correction of the displacement. The importance of re-infection is stated. The results of conservative therapy in a small series of patients are given.

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EDITING SEVERAL OPHTHALMOLOGICAL OPINIONS

By Dr. Frank Smith, Charlotte

Reports of new treatments are often made prematurely in the best medical journals. Recently a new source of medical information has developed, the news magazine, *Time*—which, from the inquiries we receive, interests both physicians and laymen in its medical reports.

Many inquiries about *Time's* report of cortin as a cure for glaucoma, apparently based on one clinical case, have been received. Clinical investigations have not substantiated the claims for this drug. Chronic glaucoma is treated by miotics as long as the condition is held in check; if there is evidence of advancement a filtering operation is demanded. It is necessary to follow such a case at frequent intervals paying particular attention to the intraocular tension and changes in the visual fields. Acute glaucoma is usually treated in a similar manner; if a basal iridectomy were performed when the first acute attack occurs there would be less blindness from chronic glaucoma later.

A little later the same publication tells of a new glass to make the blind see. This was heralded by the United Press and later what was represented as conclusive evidence was given by the optometrist and his patients in the news reel. Such a lens, known as a telescopic lens, has been sold by Zeiss for 30 years; it is of value in rare instances. Charitable organizations and friends of blind people raised money and sent patients from North Carolina to New York to find that the lenses were of no value to them. The value of such a lens is illustrated by the case of one of our college presidents who has worn one for the past seven years. Without it he could not read: with it he says that he can read 75% as fast as he ever could. His left eye had been destroyed by an infection and his right eye had been considered worthless for ten years from inflammation and subsequent cataract.

Following his cataract extraction I could see that a small lesion had destroyed the macula, with the surrounding retina normal. Under such conditions only a telescopic lens offered hope of his being able to do the reading necessary to carry on his work.

Recently we were told of a physician from Odessa who can generally restore sight lost because of scarring of the cornea by grafting on this eye a portion of clear cornea from another eye. The technical improvement in

this operation is being watched with great interest due to the enormous loss of vision from corneal scarring but the practical results have not reached the point that we are justified in advising such a procedure except in a case in which there is not sufficient vision to walk around and in which expense does not have to be considered.

In the past two years county societies for the blind have been established in North Carolina which deserve the full coöperation of the medical profession. Their tabulation of the causes of blindness and program of rehabilitation will aid decidedly in the prevention and care of the blind.

Upon your direction of those who need skilled ophthalmological treatment depends, in a very large measure, the reduction in the number of cases of unnecessary blindness. Primarily the responsibility of preventing blindness in infants and children rests in the hands of physicians generally rather than in those of ophthalmologists. The brightest spot in the gloomy problem of blindness is the reduction of the unnecessary blindness from ophthalmia neonatorum. In 20 years where the Crede method has been enforced by law, this single measure has reduced by half the cases of blindness from ophthalmia of the newborn. Eventually such blindness will be practically eliminated. This accomplishment of those doing obstetrics is an example of what could be done by maintaining alertness as to other causes of blindness.

Dr. V. M. Hicks says that statistics gathered from the North Carolina School for the Blind show that more than 50% of children admitted with congenital cataract were not examined by an oculist before admission. In cases of congenital cataract less than 10% were examined before the age of 6; 75% between the ages of 8 and 14; 5% for the first time after the age of 18. An early examination and operation would have allowed many of them to develop as normal children, yet less than 50% were examined before the school age, when they should have had an operation when one or two years old.

From birth to the school age the care of the eyes of most children depends upon the parents and their physician. As a child cannot describe his symptoms during this period, the physician must be alert to detect eye defects since many of them cannot be corrected later in life.

Let us consider two examples: 1. A child has one eye nearly normal: the other requires a strong glass for normal vision. If proper glasses are worn constantly, by the age of two, both eyes will have normal vision and will work together. If glasses are not given until the age of six the child has learned to use only one eye and, though glasses will relieve eyestrain, they cannot give normal vision in the poor eye and, most likely, the child will continue to use only one eye through life.

2. Crossing of the eyes usually develops at two or three years, when the child begins to observe small objects, closely, and is commonly caused by a large degree of farsightedness. The proper glasses worn constantly from the time such a condition begins to develop will usually correct it.

The longer the fitting of glasses is deferred the more likelihood of the turning-in eye losing its vision. Glasses given after six years of age may cause the eyes to appear straight but the vision usually remains defective in the eye which turned in. Operations straighten the eye and greatly improve the appearance, but they too must be done early if the vision of the eye turning in is to be preserved. We cannot wait to see what will develop.

If certain eye conditions must be corrected in the first few years of life, it is evident that the child must be in the hands of an ophthalmologist at this time. The feeling that we should wait until the school age is far too prevalent due to the fact that little could be told about vision before the child could read until the use of the retinoscope became general. Today there is tendency to hang on to an old opinion handed down through generations. Then too the difficulty of examining carefully the eyes of very young children causes too many superficial examinations. Also we must remember that the optometrist is not a medical man, that he cannot use a mydratic or any drug in the eye without being liable for malpractice, consequently he must make only a superficial examination of a young child whose eyes must be dilated if the examination is competent. Naturally, we also find them saying that drops are dangerous and deferring examinations until the children are older.

Of the three million school children in this country, one out of eight is handicapped in his education by defective sight. The cost of having children repeat grades has stimulated school authorities, teachers and school nurses to look for such children and try to see that they have proper examinations. In most such cases glasses are needed; in others, general health measures; in a few, eye surgery; and, in the remainder, sight-saving classes or private education must be provided. It is well to know that what a child can see does not tell how much eyestrain the child has: it is the effort put forth by the eye to see that causes eyestrain. The physician or school nurse may find that the child's reading is better than normal on the eye chart, but the child may be very farsighted and read with unconscious effort which produces symptoms of eyestrain after using his eyes for varying lengths of time. Unfortunately this common type of eyestrain cannot be detected by school examinations, and regardless of symptoms, many such children are deterred from a competent eye examination because the vision is normal.

To my mind the medical profession is making a mistake in allowing many defects to be detected by the school nurses, when their secretaries could so easily test the vision when the children come for other care. The more we allow otside agencies to do such things which the profession could do the greater will be the demand for state medicine.

1933-34—Cause of Blindness

CLASSIFICATION BY ETIOLOGICAL CAUSE

Cause of Blindness	*Per Cent*
1. Congenital and hereditary	51.1
2. Infectious diseases	28.6
3. Traumatic and chemical injuries	7.8
4. Neoplasms	2.2
5. Non-infectious systemic diseases	1.2
6. Toxic poisoning (excluding industrial)	.1
7. Etiology not specified	9.0

(Compiled by committee on statistics of the blind from 20 schools.)

These statistics, which refer only to industrial blindness in each eye, show clearly that we must have the active interest of medical men generally if such blindness is to be reduced. Congenital and hereditary blindness is a complicated problem which must be met with information to doctors and laymen, proper marriage laws, careful medical examinations before marriage, competent medical supervision during pregnancy and skilful delivery followed by early detection of abnormalities in infants' eyes. To illustrate the economic phase the state of Missouri is taxed $52,000.00 to educate 27 blind children coming from 7 different families.

Syphilis accounts for a large percentage of the blindness and, as to optic atrophy, for 20 years, its occurrence in blind schools has been practically the same as today—16% with 75% of these atrophies attributed to syphilis.

RETINAL DETACHMENT

Before 1928, 80% of all patients with retinal detachment went totally blind in the affected eye regardless of treatment and almost none of the remaining 20% retained sufficient vision for industrial use. Today we can expect 50% cures in suitable cases if operation is done early.

We have operated in 14 cases and got eight re-attachments. The chances of re-attachment in simple detachments are reported to be 80% in the first month, while good results are rare after the condition is a year old. It takes years for such advances in treatment to become general knowledge, which is my reason for presenting this subject.

The illustrations show you the mechanics of retinal detachment and how the hole in the retina is closed by means of needles through which a weak diathermy current is passed. Resulting adhesions hold the retina permanently in place. It is necessary for the patient to remain quiet in bed for a month following the operation if the desired result is achieved.

BLINDNESS FOLLOWING THE ADMINISTRATION OF OPTOCHIN BASE

This is the fundus picture (showing slide) in a case of optochin base (numoquin) poisoning. This drug was given a young woman with pneumonia according to directions—4 grains by mouth in 5 ounces of milk every 5 hours night and day for 3 days only ( ). After the fourth from the last dose the vision became blurred. The warning in the

directions states that the drug should be stopped immediately if any eye or ear symptoms are noticed, but this was disregarded. The patient became immediately blind and has remained so. You see here that the retinal arteries became fibrous cords, a permanent change with no hope of future vision. The early changes in the retina were those of quinine amblyopia with ischemia of the retina and a cherry-red spot at the macula. This drug is closely related to quinine. (It should be noted that amblyopia has occurred after the administration of as little as 12 grains of quinine. The amblyopia usually disappears but quinine is not an innocent drug in so far as it affects the eye). This case serves to illustrate that impairment of vision and even total blindness occurs after the use of some drugs and may serve as a warning to those who use optochin base in the treatment of pneumonia. Many cases of partial loss of vision have been reported following its use with several persons remaining totally blind.

GLIOMA

Glioma is a malignant tumor which may develop in the earliest years of childhood. Most cases are found between one and four years. Since young children do not complain of visual loss the condition is not detected until some one notices a yellowish reflex emanating from the pupil—usually not until the growth is large and the eye blind with the pupil dilated. Early detection and enucleation is the only hope of cure. Death usually results from extension to the brain. It is an interesting malignancy; 90% occur before four years of age; the 20% are bilateral; it runs in families and is at times hereditary.

BUPHTHALMOS

You will notice that this little girl has a very large right eye and a large blood clot protruding between the lids of her left eye, on the way from school she bumped into a playmate and ruptured the left eye. A normal eye would hardly have sustained an injury but this child had congenital glaucoma. In children (not in adults) the coats of the eye are easily stretched by increased tension with a resulting increase in size of the eye and thinning of the coats until a slight blow may cause it to rupture. In such a case vision gradually diminishes until it is practically destroyed. The treatement is a miotic to contract the pupil and reduce the tension. When this fails to keep the intraocular tension down some type of filtering operation is done. These cases are usually seen first after the condition is far advanced. Hope of all such conditions rests in their reaching competent hands early in the course of the disease.

CONGENITAL CATARACT

Is it hereditary?
Why does the pupil remain black?
When should an operation be performed?
What results can be expected after operation?
What conditions are mistaken for cataract?

I show you three sisters who have congenital cataract. They serve as excellent samples of this condition: 1. They represent the third generation with similar defects. 2. They were 6, 9 and 12 years old when first examined by an ophthalmologist although they had never been well and the mother had told her doctor something was wrong with their eyes. 3. An operation was advised the first time they were examined by an ophthalmologist and they were able to enter school 18 months later. Each should have been operated upon by the time she was one year old.

You will notice that one of these children is definitely cross-eyed, a not infrequent occurrence in such cases, which may be mistaken for simple strabismus. A boy, six years old, who has bilateral cataracts, was sent in only two weeks ago to have his eyes straightened. Three months ago Dr. Sloan operated upon a doctor's son with congenital cataract in only one eye, who had been sent for examination because of a squint. Neither the child's father nor the local specialist had suspected cataract, because the pupil in the affected eye appeared black on superficial examination.

The pupil in the common type of (zonular) congenital cataract remains black until late because the light entering the pupil is reflected by the clear portion of the lens. In other words, the opacity is around the nucleus in the center of the lens and the light is reflected from the clear portion of the lens anterior to the opacity, until this portion of the lens becomes opaque. At times when the light is reflected from deeper within the eye a grayish reflex from the opacity may be seen. A deeper reflex accounts for the reflex from a glioma, an exudate within the vitreous, or a retinal detachment being mistaken for cataract. We have already mentioned that the turning in of an eye with cataract may be mistaken for simple strabismus.

An operation should be done just as soon as the cataract obstructs vision to such a degree as to prevent practical use of the eye. Those cataracts which obstruct the pupillary area from birth should be operated upon before the infant is one year old. The operation lasts only one or two minutes. The lens is not removed as in senile cataracts, but a V incision is made in to the lens to allow aqueous to enter the lens and absorb it. The incision is made entirely through the lens to prevent glaucoma following the operation. This method has this disadvantage; it takes from 3 months to a year for the lens to be entirely absorbed, but on the other hand, it is safer and interferes with the child's activities for only a few days. Complications have been rare in our experience.

Congenital cataract is more common than medical men generally suppose. Excluding traumatic cataract, in 1934 at the Charlotte Eye, Ear and Throat Hospital we did 59 operations for cataracts—44 senile and 15 congenital. Many more congenital cases with partial cataract were seen which will not be operated upon as long as they have sufficient vision to carry on their school work. These partial cataracts may become complete and require an operation. In cases in which there are no other congenital defects the visual results are good.

SQUINT (CROSSED EYES)

What causes squint?
When should ophthalmologist examine?
At what age should glasses be put on?
What can be expected from wearing glasses?
What is the danger of an operation?
What result is to be expected?
What happens to vision of eye turning in?

Any condition which interferes with the function of an extraocular muscle or which impairs the vision of an eye may cause deviation of that eye. The commonest type of strabismus is that caused by high degrees of farsightedness. The child soon learns that it is easier to see with one eye and allow the other to turn in. This usually occurs at two to three years when the eyes begin to accommodate to see small objects. At first the eye turns in intermittently. This is the time an ophthalmologist should examine the child *under atropine cycloplegia* to determine the cause and prescribe glasses if the child is 16 months old or older. At this time a full correction (under atropine cycloplegia) of the farsight error will correct most concomitant convergent squints. If a full correction has been given and the glasses are worn constantly improvement should be noticed within a few weeks. Should no improvement be evident after 3 months an operation should be performed. There is almost no danger from the operation in the hands of one who is accustomed to the technique, and it is rare not to get decided improvement. The operation should be done as soon as it becomes evident that glasses will not correct the condition. Early operations should be urged in the hopes that we can get both eyes to function together. If the condition is not corrected very early the turning-in eye gradually loses its vision and later there is little hope for the lost vision being regained so that it will function with the other eye even though an operation makes the eye appear straight.

PARALYSES OF EXTRAOCULAR MUSCLES

Until comparatively recently, because of poor results following operations, not much attention was paid to the correction of paralyses of extraocular muscles. Such paralyses are congenital or acquired. Very satisfactory results are now obtained by transplanting portions of adjoining muscles to the resected paralyzed muscle. Dr. Sloan has recently obtained good cosmetic results in three cases of paralysis of the external rectus which is the muscle most usually paralyzed. No operation is attempted until there is no further evidence of recovery, but for best results the operation should be done before contractures set in.

Pending the arrival of Dr. McLester, the Chair called on Dr. Ambler, who has been specializing in anesthesia, to make some preliminary remarks before the exhibition of the motion pictures of the Winthrop Chemical Co. on "Modern Methods of Anesthesia"; "Novocain Anesthesia in Obstetrics."

Dr. Ambler: I have not seen these pictures since last fall, but I have been asked to make a few remarks about them before they are shown, particularly on Evipal. Evipal is a barbiturate, which is detoxified very rapidly. These pictures show you the technique and the dosage.

I want to bring out particularly the dose and the technique in giving Evipal. Surgeons should never give Evipal unless they have someone with them. Never give Evipal alone. The patient goes into such deep relaxation so quickly that you need someone to keep watch on the patient.

The doses, as has been brought out recently, have been changed. The dosage is 2 cc., intravenously, and then stop, the patient will be asleep in about twenty seconds. Then increase your dose, giving 1, 2, 3, 4, 5, or more, cc.'s, dependent upon the duration you want the anesthesia. If the patient is not asleep within thirty seconds, then cautiously add two more cc.'s, and wait twenty seconds more.

An airway should always be at hand. I have found it a good practice, and well worth your while if you do use Evipal, to always put a mouth prop in the patient's mouth before you start. I have found in some cases where we did not have the patient's mouth open, he swallowed his tongue, and it was difficult to insert airway into the patient's mouth.

Evipal lasts fifteen or twenty minutes, and the patient wakes without nausea, waking up just about as quickly as he went to sleep. It should not be used in the office, because if you do get in difficulty, you haven't any oxygen or other emergency equipment, and often no one to help you. Although it sounds like Evipal is dangerous, it is not. We haven't had any deaths from Evipal.

Evipal is fine for fractures, teeth extractions, opening abscesses, painful dressings, and in cases where you want a ten to fifteen minutes anesthetic. The blood pressure falls about ten points. The color is good, and breathing is very quiet.

Now, a word or two about avertin. I have noticed here and there that the men using avertin will allow the nurse to fix it, or give it to the patient, and will leave the patient alone in the room w.th the nurse. That is about the worst thing you can do. The nurses, while instructed, and know how to take care of the post operative patient, somehow they will not keep a man's chin up, and keep him breathing. I have come back and found the patient cyanosed, and if you leave him without someone who knows how to use avertin you will get in difficulties. I have noticed some using rather high doses of avertin, which is based as a rule on 70 m.g. per kilo. If you go after a complete anesthetic then is where you are getting into difficulties. That is what the Germans did. They thought they had a new anesthetic and used 200 m.g. and had deaths.

Don't go over 90 m.g. I never give over 90 m.g. and only then to a very small child, or someone that we want to have completely relaxed without any supplementary anesthesia. This morning I did an operation giving 90 m.g. to a child. It worked fine.

From 140 to 160 lbs. use 70 m.g., and from 160 to 200 lbs. and above, 60 m.g. per kilo.

The antidote for avertin as some of you know, is coramine, and if you have to use coramine, use it intravenously. Use 2 ampules, which is 5 cc.'s, and give it intravenously.

It has some peculiar action on avertin and is a respiratory stimulant.

I am not a representative of this firm. I am just here for a discussion of these pictures. . . . This machine has failed to give us satisfaction, it will be set up down stairs, and the operators hope to have it running satisfactorily again.

The Chair then called upon Dr. Ringer to introduce Dr. J. S. McLester, President, American Medical Association, of Birmingham, Alabama, the guest speaker of the session.

Dr. Ringer: It is one of the paradoxes of our social structure that individuals who are prominent in themselves, and occupy positions of eminence, have to be introduced to their audiences by the passport of introduction by those whom nobody knows.

For me to introduce the next speaker is parallel to carrying coals to Newcastle, and our necessary introduction would presuppose a rather low standard of intellect among those in this room. It would be regarded that you did not know there was an American Medical Association, and that the President thereof is one of the prominent internes of the South, and that you did not know that man's name is Dr. McLester.

We will assume you know there is an American Medical Association, that it has a President, that his name is James S. McLester, that he is here —and here he is. (Applause)

ADDRESS OF DR. J. S. McLESTER

President American Medical Association, Birmingham, Ala.

PRESENT-DAY NUTRITION OF THE AMERICAN PEOPLE

Dr. McLester did not furnish copy of his very masterly address.

Dr. Ringer: I wish to thank Dr. McLester, in my official position as President of this Society, and also his personal friend, for coming here at a sacrifice to himself, because—he has not said so to me, but I know that he abandoned another meeting that was particularly interesting to him, to come and be with us on this occasion.

The Second General Session was then adjourned at 12:00 M., and was followed immediately by the

CONJOINT SESSION OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA AND THE STATE BOARD OF HEALTH

Dr. Ringer: Gentlemen, the hour has struck, and I declare the meeting in order of the Medical Society of the State of North Carolina; and

The North Carolina Board of Health. And at this time I turn over the Chair for the rest of the meeting to Dr. S. D. Craig, President of the State Board of Health.

Dr. Craig: Gentlemen, we will have the reading of the Secretary's Report.

Dr. Carl Reynolds, Secretary: I wish this little family group would come up here and get together. I am trying to give a message that will make the medical profession realize that we need coöperation. In my report to the Conjoint Session this was my purpose: (Reads following report)

ANNUAL REPORT
NORTH CAROLINA STATE BOARD OF HEALTH
TO
CONJOINT SESSION STATE MEDICAL SOCIETY

By Carl V. Reynolds, M.D.,
Secretary and State Health Officer

May 6, 1936

In my report to the Conjoint Session this year it is my purpose to deviate from the usual formal report of the activities of the Health Department during the year.

In its stead it is deemed appropriate to discuss with you plans for the future.

HEALTH FEATURES CONTAINED IN THE PROPOSED FEDERAL LEGISLATION COMING OUT OF THE SOCIAL SECURITY ACT

When the 74th Congress enacted into law H. R. 7260, an Act known as the Social Security Act, provision was made therein to aid the states in raising the standard of all public health activities.

Personally, if I were giving a title to the Act it would read "Man's Humanity to Man."

North Carolina's benefits derived from such an appropriation are best set out in Title 6, Section 601. "For the purpose of assisting States, counties, health districts, and other political subdivisions of the States in establishing and maintaining adequate public health services including the training of personnel for State and local health work, there is hereby authorized to be appropriated for each fiscal year, beginning with the fiscal year ending June 30, 1936, the sum of $..... to be used as hereinafter provided."

"The amounts of such allotments shall be determined on the basis of the population, special health problems, and the financial needs of the States.

"The moneys so paid to any State shall be expended solely in carrying out the purposes specified in Section 601, and in accordance with plans presented by the health authority of such State and approved by the Surgeon General of the Public Health Service."

Your State Board of Health has complied with all requirements, and plans have been approved by the proper authorities in Washington, and the money is now in the State Treasury subject to check for carrying out the projects.

There has been an immense amount of study and thought given to the ways and means of securing the best results to the greatest number out of the funds secured.

It is realized too that such Federal funds are not to replace existing State, county, or municipal funds but ONLY to SUPPLEMENT such funds.

To accomplish best results certain minimum standards were set up for medical officers, nurses, engineers and sanitarians.

Medical Officers. Basic educational requirements shall be (a) degree of "Doctor of Medicine", (b) Candidates shall not be more than 35 years of age when first specializing in public health work, (c) Personnel selected shall already have had a graduate course of instruction in public health of not less than three months duration in a University. For health officers of jurisdiction having population of more than 50,000, not less than one year in residence at a recognized University School of Public Health, is required.

The above requirements guarantee us that only men of the proper education and experience shall be employed as medical officers. Similar qualifications are demanded of nurses, public health engineers, sanitarians and sanitary officers.

The law provides for the development of demonstration services in needy areas and among groups in special need. It provides for coöperation with the medical, nursing, dental, welfare, and other groups. It is designed as a long-range plan. It is aimed to improve methods of administration and care for expectant mothers, for women in confinement, and for babies. The law itself provides, and the Children's Bureau at Washington, which is the national administrative agency, feel, that emphasis should be placed on the development of minimal health services for those unable otherwise to obtain such services. It hopes to make available the fundamentals of health education, which will eventually lead to adequate maternal child care in every section of the State.

The new improvements, additions, and divisions arising out of the Social Security Act to be set up in your State Board of Health are: (a) grants in aid for Central Administration; (b) grants in aid for generalized public health work; (c) grants in aid for Maternal and Child Hygiene, (including Dental Hygiene); (d) grants in aid for Crippled

Children; (e) grants in aid in Industrial Hygiene; (f) grants in aid for the regional teaching unit at Chapel Hill.

On January 1, 1936, through the coöperation of the Julius Rosenwald Fund, a colored physician was added as Field Agent to work, on request of local health officers, among the negro population in a program of public health education. The program is outlined by the local health officer and the Field Agent is responsible to the local director of health while on assignment in their department. This is the *first* service of this type to be rendered in the United States. The State Board of Health has received many letters of commendation from leaders in the negro race, showing their appreciation for the type of work which Doctor Hughes is doing among their people.

With these added responsibilities we desire to make this statement,—*all* activities are directed, supervised, and controlled by the best qualified medical personnel available, always mindful of the importance of the ethical coöperation and proper relationship with the medical profession.

The passage of the Social Security Act, State aid to counties, funds for the erection and maintenance of a tuberculosis sanatorium, and the Industrial Hygiene Act, are recognitions that government has a definite responsibility in the prevention of disease and the preservation of health. It is a recognition that there is an intra and inter-state and national relationship that is so interwoven and inter-dependent that to neglect a part you neglect the whole.

We are on the threshold of a new and brighter era and it is the dawn of a new day if only we will seize the opportunity to guide, direct and control policies. All of us recognize that health security is basic in importance to human happiness.

We must appreciate the fact that our people are not receiving or accepting the services available.

We must appreciate the fact that they need it and should have it. Then let's submit a workable plan that will retain our individuality and give to the patient the right to choose his medical or surgical adviser.

This can, and to my mind, must be accomplished if our proud heritage is maintained. We realize that health is basic in social and economic security.

We realize that our citizenry is not availing itself of the protection obtainable through the advances made in medical science.

We must realize this condition is not as it should be and that social insecurity must be appeased.

We must realize that it is imperative to adjust ourselves to the new order of things. We do appreciate that it is American for our children born to have equal protection against infectious diseases and to be physically and mentally fit to compete for their place in the world.

We must prevent the preventable—correct the correctible—cure the curable.

To accomplish such a program it is essential to have the coöperation of the parents and guardians; physicians and dentists; governmental agencies, and public health officials.

I am persuaded that it is logical reasoning to assume that we can accomplish nothing through rebellion. We must recognize the truth and the truth must be accepted.

To regiment medical service is to destroy its efficiency.

To preserve medical service to its present standards and promote its continued growth, we must encourage, foster and stimulate individual attainments and recognize it by a compensation commensurate with its importance.

To prevent regimentation, we must not only devote ourselves to the science of medicine and the demands of our practice, but we shall recognize that selfish individualism is hazardous and that mass protection is the necessary element in social security.

There must be a relationship between the practicing physician and public health administration. A correlation and coördination of our activities that will serve to the best advantage to the whole people. In this manner, we can, as M. Edoward Herriot interprets Doctor Sands' efforts as attempting "to make progress serve us instead of enslave us."

If you will give us a personnel of men and women of talent, courage, patience, character and determination, we will utilize this epoch-making opportunity to its greatest advantages.

DEPARTMENTS

To present to you a brief outline of our new activities disregarding a review of our regular and normal functions, is a tedious undertaking but its importance is of sufficient consequence to justify your time and attention, and ours in its preparation.

DIVISION OF PREVENTIVE MEDICINE:

New work in the Division of Preventive Medicine either launched during this fiscal year or planned for the next.—With funds now available from the Children's Bureau under the Social Security law, an expansion of the division work is made possible. The principal expansion is in the health education work and in the extension of maternity and infancy work.

In health education work an assistant director has been engaged and commenced work on February 20th. In addition to assisting with the routine work of the division, the assistant director is already supplying a special article once a week for about twenty of the afternoon newspapers and about eight of the Sunday morning papers of the State. These articles carry helpful information on a variety of health subjects. They also provide

definite information about the work of the various departments of the State Board of Health.

An additional clerk for work in the mailing room will be employed. This will assure even more prompt attention to requests for literature than in the past. An additional supply of literature, both of special publications of the State Board of Health and of the Children's Bureau at Washington, will be made available.

The Children's Bureau has approved the establishing of about sixty centers for prenatal and infant care work. The centers to be established in counties having whole-time health officers will, of course, be under the direction of the whole-time health officers. Some aid in establishing additional facilities in a few whole-time county health departments is provided for.

The centers to be established in unorganized counties will be directly supervised from the department, coöperating with the local county authorities and the county medical profession. Nothing new or radical is to be undertaken in these centers, but simply the extension and expansion of work which has already proved its value in many cities and counties.

An additional nurse has been provided for each of six whole-time county health departments. In addition to that about fifteen additional nurses will be provided for work in unorganized counties. These nurses will all carry on a general public health program, as just stated, under the supervision of the State Board of Health and in coöperation with the local authorities including the medical profession. By providing competent medical prenatal service it is hoped that a large class of women now served only by midwives will avail themselves of the services of physicians at confinement. The medical assistance of general practicing physicians, pediatricians, and specialists in obstetrics will be secured as needed in this extension work.

Every effort will be made to coöperate with the welfare authorities in each county where this work is carried on, to secure through their facilities the hospitalization and the medical treatment for confinement cases and for babies needing such care. The work, however, of the Board of Health will be strictly along public health lines and on a preventive basis. The division will coöperate in the closest manner possible with the practicing physicians in all localities where work is to be undertaken.

DIVISION OF ORAL HYGIENE:

Mouth Health Teaching as carried on by the Division of Oral Hygiene is proving its worth as an integral part of our Public Health Program. This Division is directing its activities to the field of prevention by conducting an educational program in the schools of the State. The staff has been increased this year due to the fact that we have been able to induce appropriating bodies in counties and individuals to make additional funds available. This money we speak of as funds from outside sources.

Mouth Health Programs were conducted in thirty-eight counties and three city units during the school year just closing. The dentists go into the schools and teach Mouth Health didactically. Then they examine the teeth of all the children, make the necessary corrections for as many indigent children as possible, and refer the other children, by cards mailed to their parents, to their family dentists.

Let us give one concrete and very striking example of what is being accomplished by this Division in the field of prevention. Our records show that in an isolated county, in which there is no dentist, six years ago, upon our first visit to the county, we had to extract forty-seven permanent teeth in one school. This county has had a Mouth Health Program each year since our first visit, all of the schools being visited each year. In the Program just finished in this county there was only one permanent tooth to be extracted in all the schools, and this was done for a child who had moved into the county during the present school year. This should be satisfactory evidence to all concerned that Mouth Health Teaching does pay and that it has a place in every Public Health program.

To further and make more effective our Mouth Health Teaching we employ many methods of Visual Education, one of which is Puppet Show, *Circus or Bust*. During this school year we have played to approximately five hundred and forty schools. We invite the children to write to "Little Jack," the hero of the play, and ask them to mention the four rules of Mouth Health emphasized in the show. "Little Jack" has received and answered thousands of these letters. It is needless for us to call to your attention the worthwhileness of this direct tie-up between the children and the State Board of Health, or to the propaganda of a constructive nature that this activity has set loose.

The outstanding achievement of this Division for the year 1935-1936 is the arranging for a course of Public Health Dentistry to be taught in the School of Public Health of the University of North Carolina. This is the *first* School of Public Health in the United States or abroad to train dentists.

We are grateful to the medical profession for their coöperation and encouragement and bespeak for the Division of Oral Hygiene the continuation of their interest and support.

As for our future plans, hopes and expectations, we would say that we expect to continue to grow, expand, and develop along our present lines as rapidly as funds, sound judgment, and opportunity will permit.

DIVISION OF COUNTY HEALTH WORK:

New health services have been established in Macon, Graham, Orange, and Hertford counties.

All local health units with aid of Social Security Funds will have a full-time health officer, two public health nurses, a sanitary officer, and a clerk, as a minimum.

Training of Reserve Personnel. Through the coöperation of the University of North Carolina and the North Carolina State Board of Health, there has been established a Division of Public Health in the University of North Carolina. The establishment of this Division in the University of North Carolina marks the development of the first coöperative public health division in the United States. This Division at the University of North Carolina has been designated as the Regional Training Center for United States Inter-State Sanitary District Number Two, which embraces eight states and the District of Columbia. Heading this Division of Public Health is Dr. Milton J. Rosenau, formerly of Harvard University. Since he assumed the directorship of the Division, two courses of instruction have been offered, the first beginning on January 15th with four health officer trainees enrolled from North Carolina; the second course began on March 23rd with a total enrollment of fifty-one, including fifteen medical health officer trainees and thirty-six sanitation personnel trainees. These trainees are enrolled from Delaware, West Virginia, Virginia, South Carolina, Georgia, Florida, and North Carolina. North Carolina has four health officer trainees and eleven sanitation personnel trainees.

The establishment of the Division of Public Health at the University of North Carolina is the first to train both health officers and sanitation personnel in comparable courses in the United States.

Nurse trainees are being trained at George Peabody College for Teachers and in the St. Phillips Division of the Medical College of Virginia. A total of fourteen white nurses are enrolled and four colored nurses.

These various training courses are of three months duration. Upon the completion of such courses, all North Carolina trainees will be assigned to a field training center which has been designated as the Orange-Person District Health Department and the Durham City-County Health Department. Personnel will be assigned to this field training center for one month to become acquainted with the public health practices and law of the State of North Carolina.

Advisory Service to Local Health Units. Provisions have been made within the Division of County Health Work for a Consultant in Public Health Administration, a Consultant in Public Health Nursing, a Consultant Engineer, and a Consultant Statistician for the purpose of advising with local health units in developing local public health programs and raising the standards of service rendered.

THE DIVISION FOR CRIPPLED CHILDREN:

The Division for Crippled Children was established as a service of the State Board of Health on April 1, 1936, for the purpose of coördinating and broadening activities in the State in behalf of the crippled child. Its establishment is in furtherance of plans developed over a period of several months to provide a means of coöperating with the Crippled Children's Division of the Children's Bureau, U. S. Department of Labor, in the

administration of the provisions of the Social Security Act. It has been developed in conjunction with the North Carolina Annual Plan for Crippled Children, a brief outline of which follows:

Objectives: To locate and register all crippled children, provide treatment for the indigent type and follow-up to the age of twenty-one years.

Description of Plan. (a) Financial participation through state appropriations to the Orthopedic Hospital and State Board of Health Orthopedic Clinics. (b) State Board of Health has been designated as the official State agency. (c) The central registration bureau has been set up in the offices of the State Board of Health. An Advisory Committee composed of representatives of the North Carolina Orthopedic Hospital and the medical, public health, nursing, social welfare, vocational education, and civic leadership of the State has been organized to act in an advisory capacity and to promote the coöperation of medical, public health, and welfare groups. Administrative activity for the needy crippled child will entail the operation of established clinics, providing hospital care and treatment, convalescent care and supervision. A division of the State Board of Health, under a medical director, staffed by a State Supervisor and two assistant field supervisors and a whole-time secretary, has been established. The established State clinics will continue to be operated under the State Board of Health with Local Advisory Committees promoting the work of these clinics as units of the State Plan.

Needs of Crippled Children. The greatest need is the establishment of additional hospital beds supplementary to those available at the North Carolina Orthopedic Hospital. There are 1,200 examined crippled children in the State awaiting hospital care at this time.

The objectives of the State Board of Health through its Division for Crippled Children are:

A. To locate crippled children.
   1. Establish a registration bureau in the State Department of Health.
   2. Transcribe existing registrations of cripples.
   3. Utilize services of local health, welfare, and school officials in the location and registration of crippled children.

B. To secure expert diagnosis for these children in all parts of the State.
   1. Established clinics.
      a. Twelve State clinics.
      b. Two N. C. Orthopedic Hospital clinics
   2. Promote diagnostic clinics in isolated rural sections where need is indicated.

C. To provide expert treatment and hospital care.
   1. Clinics.
   2. Hospital Care..
      a. N. C. Orthopedic Hospital for children under sixteen years of age.
      b. Selected general hospitals.

D. To establish a field supervisory and follow-up service.

E. Engender public interest in the problem of the crippled child and encourage the recognition of its responsibility to create opportunities for the development of this group into as normal and useful life as possible.
   1. Through local health and welfare agencies.
   2. Through civic organizations.

Federal allotment from the Crippled Children's Title of the Social Security Appropriation was received on April 21, 1936, and after setting aside certain sums for administration, payment of professional services, and a reserve for special type and emergency cases, it is estimated that there will be funds available for approximately 9,500 days' hospital care annually. In order to arrive at a distribution of this hospital care equalized between the various clinics operated in the State, we are allotting 1,050 days' hospital care to each Orthopedist coöperating in the North Carolina Plan for the care of the crippled child. We are giving notification to the clinical surgeons of the availability of these hospital days and requesting that each recommend several cases which have been registered in the State clinics and who are at the present time awaiting arrangements for hospital admission. As soon as this information is available, admissions will be arranged with the hospitals and the actual treatment of these cases gotten underway.

DIVISION OF INDUSTRIAL HYGIENE:

During the past year work in industrial hygiene has been inaugurated to extend the benefits of preventive medicine to the million and a quarter North Carolinians who are engaged in industry. The initiation of this important public health activity was made possible by the State Industrial Commission which employed for the purpose funds appropriated for the administration of the Occupational Disease Act. The continuation and broadening of this activity is assured by an additional appropriation of money received from Social Security Funds allotted to the U. S. Public Health Service, for distribution to the several states.

Although several other states have engaged in industrial hygiene work on a limited basis, North Carolina is the first State to undertake a program sufficiently comprehensive to include pre-employment examination of workers and engineering and medical studies of plants. The importance of such a program is evidenced by the fact that 18 other states are engaged

in or are committed to engage in this work. A happy situation exists in North Carolina in that since its establishment our Division of Industrial Hygiene has had the hearty coöperation of the State departments concerned respectively with labor, insurance, and workmen's compensation.

By far the greatest occupational disease hazards in the State are those created by siliceous dusts, exposure to which results in the development of asbestosis and silicosis complicated with tuberculosis. The first undertaking of the new Division, therefore, was a survey to determine the extent of the dust problem. During the fall of the past year 103 plants were visited. There were 4,406 persons employed in these establishments, and of this number 60% were found to be exposed to siliceous dust hazards. Measures for the control of dust were found to be provided for only 12% of the workers that are exposed to such hazards, and even they are not protected since in many instances such control devices as were found were either not regularly used or were inefficient. More than 75% of the workers in the granite, mica, feldspar, talc and asbestos textile industries are exposed to siliceous dust hazards. The survey covered only a portion of the siliceous dust industries of the State, but enough plants were visited to make the results representative of conditions existing generally in the dusty trades.

In addition to the preliminary survey, the Division of Industrial Hygiene coöperated with the U. S. Public Health Service in making a detailed study of the occupational disease hazards in five asbestos textile plants. Their investigation involved the clinical and X-ray examination of 500 workers and a study of their working environments including a determination of the number and size of dust particles in the air. Following this research, our personnel made a similar study of a granite cutting establishment involving 40 people.

The work of the department is to consist of plant studies and pre-employment examination of workers. The plant studies will include a clinical and X-ray examination of all employees, and an engineering and chemical evaluation of their environment. The pre-employment examinations of workers will be confined to those industries which have been designated as subjecting the workers to siliceous dusts. It will include X-ray and clinical examinations of prospective employees. Much of this work will be performed in industries about which nothing is known with respect to the occupational disease hazards to which workers are subjected. The Division should produce results which will be of general value to both industry and medicine.

DIVISION OF EPIDEMIOLOGY:

If a conquest against an infectious or curable disease that is controllable is successful we must have the concerted support of organized medicine, the public health personnel, interested social workers, and the press to impress upon the people the necessity of taking advantage of opportunities available to them. It must be remembered that our people are not receiving

or accepting protective agencies that are available. Smallpox, diphtheria and typhoid fever are great examples of communicable disease that could be exterminated. Tuberculosis, certainly could be reduced to minor consequence.

The one outstanding preventable disease that challenges the ingenuity of the medical profession, and particularly public health officials, is the control of syphilis—a controllable disease that is fast becoming the "captain of death."

We, as physicians, should report our cases promptly and insist upon the infected cases being treated until cured. We should seek the original source of infection and cause him or her to be treated. We should forget *syphilis* as a loathsome and unmentionable venereal disease and classify it as an inherited or accidental infectious disease to be treated and controlled by medicine available as any other communicable disease. We should make known in no uncertain terms the dangers arising from lack of control, and it is the duty of the press and radio to broadcast this information. A determined and concerted action through this informative group will do away with tabooing of such important information.

The prevention of venereal disease in Sweden, Denmark, Norway and Great Britain is making grand and telling advancement. The law of control was established in Sweden in 1919. In Sweden's six million population "6,000 new cases were reported in 1919; 431 in 1934.

"During the last year about a fourth of the new cases were infected abroad. Of 431 cases 110 occurred in Stockholm, 212 in other cities containing a total population of 1,500,000 inhabitants and 109 cases were in rural districts containing a population of four million inhabitants."

I shall now give a short account of the requirements of the law against venereal disease in Sweden for your consideration and thought. The law contains the following principal points:

"1. Every person suffering from venereal disease must submit to treatment by a physician and must following his directions.

2. Every such person has the right, irrespective of the size of his income, to obtain free medical treatment and medicine, in case he is not being treated by a private physician. This includes free injections, free serologic examinations, as well as free certificates required by the public health authorities as to complete recovery or continued treatment. Hospitalization in a special general ward is also furnished free of charge.

3. Every physician treating a new case of venereal disease must try to obtain information about the source of infection.

4. Against patients, who do not properly follow up their treatment, and against individuals identified as the source of infection but unwilling to come to treatment, certain compulsory measures may be taken.

5. A person who knows that he or she suffers from venereal disease and who by carelessness causes its transmission, is subject to punishment of a severity up to forced labor.

6. Every marriage partner prior to obtaining a marriage license has to sign a statement certifying his or her freedom from venereal disease in a contagious stage.

7. The local public health authorities must publish information about the existence of the clinics for the treatment of venereal disease."

The Division of Epidemiology expects to add to its staff a competent physician to direct the venereal disease control program, which is to be developed through Social Security funds. The details of the plans for this program are to be worked out later. Suitable motion picture equipment, projector and films, have been purchased to augment this work.

The North Carolina State Board of Health, in coöperation with the Rockefeller Foundation and Vanderbilt University, is conducting an intestinal parasite survey, especially for the purpose of determining the number infested with hookworm. Seventy of the 100 counties in North Carolina are to participate in the survey.

The encouragement of better reporting of the various notifiable diseases is an aim of the central office. If control measures are definitely known, delay in reporting would cause a loss of valuable time in the application of these measures during the time of an increased prevalence of any one of these diseases. For example, during our poliomyelitis epidemic, had we had definite known measures to control the disease, this office would have been greatly handicapped in applying such measures due to the fact that the average delay in reporting cases was between three and four weeks.

The services of the Director of the Division are available for consultation relative to any unusual disease situation.

THE MALARIA CONTROL PROBLEM

Approximately $600,000 of the Federal Relief funds in North Carolina was spent between May, 1935 and May, 1936 for labor, supervision, engineering, material, supplies and equipment used on projects involving the control of malaria in this State. This program was a continuation of the work which was started in 1933. It has progressed consistently throughout the entire relief program in North Carolina. At present it is financed by the WPA. The work has been calculated to remove the breeding areas of anopheles mosquitoes (malaria-carrying) from over 300,000 North Carolina citizens. It should prove to be of immense value from both the public health and economic standpoints since in recent studies, scientists have evolved the fact that the earning capacity of a territory ridden with endemic malarial fever is only two-thirds that of a similar territory free from the disease.

Reports from practicing physicians and also the results of several slide surveys taken under the supervision of State Epidemiologist Knox indicate that malaria has for the past three years been definitely on the increase in North Carolina. However, a study of last year's vital statistics of malaria reveal that in the counties which participated in the malaria control program a 16½% decrease in proportion of deaths from malaria since the work was initiated in 1933, was experienced.

It is well to mention several of the larger jobs. In Rowan and Iredell counties, one project involves the use of five dredging machines in addition to the labor of a large number of relief clients. The ponds and swamps which have afforded breeding places for malaria vectors will be removed from the proximity of over 40,000 people. A blood slide survey taken in mid-winter gave a positive reaction of over 13%. Similar projects have been started in Pitt and Forsyth counties. Small, but equally important hand drainage projects have been carried on in practically every county in the malarious belt of North Carolina.

It is expected that this program will be continued as in the past. An average of over 2,000 men have been used in malaria control work. Over 25,000 acres of ponds, swamps and other breeding areas for anopheles mosquitoes have been removed from North Carolina by approximately 900 miles of ditches and canals.

DIVISION OF SANITARY ENGINEERING:

The Division of Sanitary Engineering has been active in promoting sanitary projects for which Federal aid could be secured.

It is estimated that over 10,000 people will have been provided with clean, safe public water supply and water-carried sewerage, and water and sewerage facilities for over 90,000 more will have been enlarged or improved.

Under the WPA, it is estimated that between 100 and 200 small water works and sewerage extensions and improvements have been made.

It is felt that by means of such extensions many thousands of urban dwellers are now accessible to water lines and sewers that were not accessible to them before.

In addition to the water and sewer improvements, plans and specifications have been approved during the past year for approximately 11 swimming pools. This means that a real beginning has been made in the safety and sanitation of swimming pools throughout the State. In place of the "ole swimmin' hole" and the common public bath tub, we are now beginning to have sterilization and re-circulation of our pool water, and general swimming pool sanitation in conformity with the best modern practice.

North Carolina is leading all the other states in the number of cities and towns enforcing the Public Health Service Milk Ordinance with an

efficiency of over 90%. Sketches, plans and engineering assistance have been furnished from which at least 17 new pasteurizing plants, 99 new dairy barns, and 124 new milk houses have been built during the year.

The number of privies constructed by the Federal relief agencies in North Carolina is shown by the following table:

Privies constructed by CWA	39,256
Privies constructed by ERA	22,833
Privies constructed by WPA and NYA through April 18, 1936	8,000
Total privies constructed since beginning of CWA	70,089

Privies constructed during period April 1, 1935 to April 1, 1936:

By ERA	12,667
By WPA and NYA	6,046
Total for year ending April 1, 1936	18,713

If all the privies built in this State since December 1, 1933, were placed side by side they would span a distance of 80 miles.

The average person would probably believe that 70,089 privies is sufficient to completely sanitate North Carolina's rural homes. Unfortunately, this is not true, and the surface has just been scratched in community sanitation work in this State.

A survey of 12 representative counties in North Carolina made by the Extension Division of the Home Demonstration Work of State College, before the work relief privy construction program was started, resulted in the following summation:

Rural homes with no toilet facilities	33%
Rural homes with insanitary toilets	53%
Rural home with sanitary toilets	14%

The 70,089 privies built since December 1, 1933, is 19% of the 375,000 estimated homes. You cannot assume that one-third of the rural homes in the State have sanitary means of excreta disposal. This assumption would not be true since the community sanitation work, in many cases, was confined to small villages and population centers not classified as rural districts.

At the present time we have WPA Community Sanitation projects operating in 75 counties and NYA Community Sanitation projects which supplement the WPA projects, operating in 19 counties. These projects are employing about 1,000 men and are constructing approximately 3,000 privies per month.

Assuming that only 20% of the rural homes are sanitated, we now have approximately 300,000 homes without a sanitary toilet. At the present rate of 3,000 privies per month being constructed, it will require 8 1/3 years to provide all of North Carolina's rural homes with a sanitary privy.

DIVISION OF VITAL STATISTICS:

The Division of Vital Statistics recorded 33,205 deaths for 1935. This represented 10.1 deaths for every 1000 estimated population, a rate slightly lower than the 10.6 for 1934. In round numbers there were 1,400 fewer deaths from all causes than for 1934. There were fewer deaths from typhoid fever, measles, scarlet fever, whooping cough, diphtheria and tuberculosis among the infectious diseases. Influenza and pneumonia accounted for approximately the same number in 1935 as for 1934. Pellagra and diarrhea and enteritis under two years of age showed a decline. There were 67 deaths from poliomyelitis. This was three times as many as was caused by this condition in 1934. However, in comparison with many other infectious diseases it was a minor cause of death. There were 800 fewer puerperal deaths. On the other hand such conditions as cancer, heart disease, and diabetes mellitus show no such improvement, but in some instances actual increases were shown. Accidental deaths as a group increased, automobile accidents alone accounting for 100 more deaths than for 1934.

In 1935 there were 79,746 live births, approximately 200 more than for 1934. This represents over twice as many births as deaths and would indicate in general a healthy growing population.

The Division of Vital Statistics has been equipped with the most modern indexing and record keeping systems. The 10,000 certificates received monthly are completed, arranged, indexed, transcribed and tabulated. In addition to the routine work, both interpretative and clerical, the Division of Vital Statistics handles an increasingly large number of special requests. Numerous tabulations are made for special studies being conducted by staff members or other individuals. To assist with the routine duties and to enable the Division of Vital Statistics to compile more detailed reports promptly after the certificates are recorded three additional employees are being secured. This will enable the Division to issue detailed monthly reports in time to be of current value to the health worker and the practicing physician.

More use is being made of these vital records as is evidenced by the numerous requests for this type of information, and the aim of this Division is to make these records of still greater practicable value.

DIVISION LABORATORY OF HYGIENE:

The State Laboratory of Hygiene has outgrown its present plant. Further expansion of activities is almost impossible until more space and improved equipment are available.

The 1935 General Assembly showed a sympathetic understanding of the problems confronting the laboratory and appropriated funds for the repair of the present building and made provision for a slight increase in personnel. They also enacted legislation permitting us to apply for a Public Works Administration Loan and grant for a new Laboratory plant.

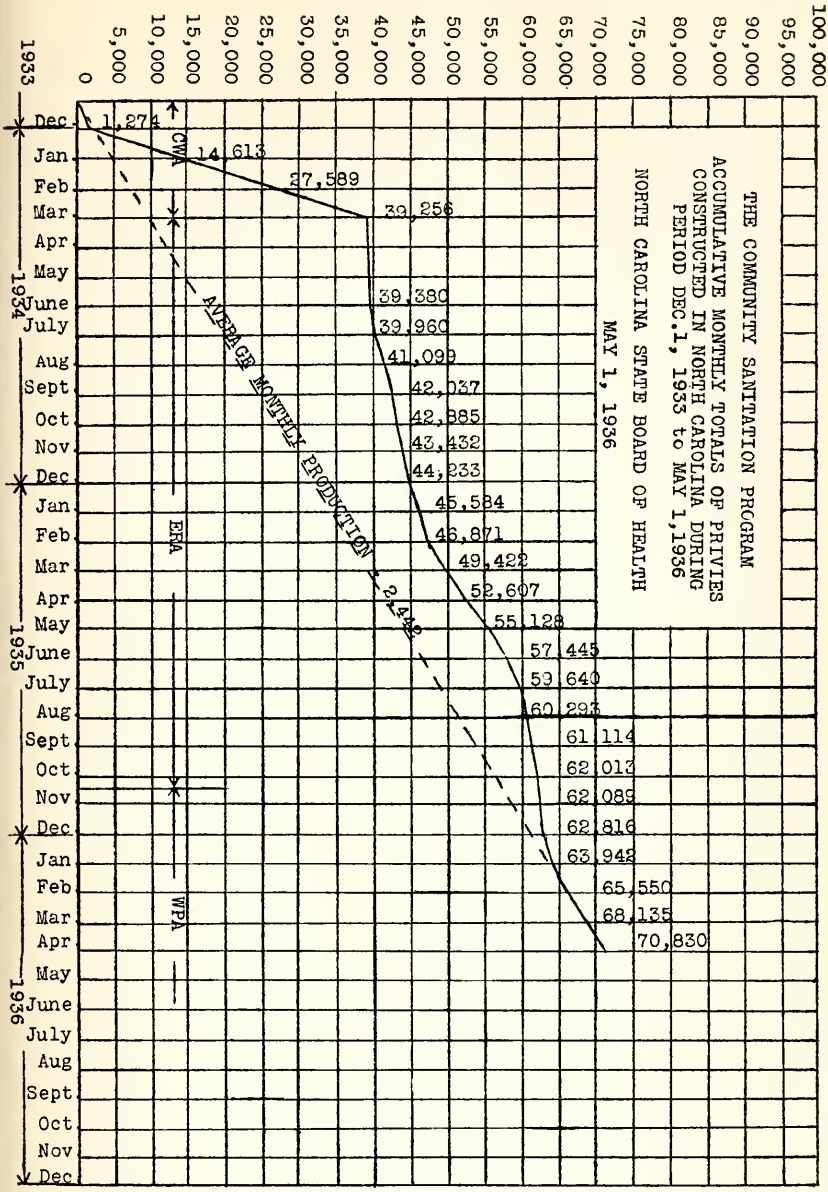
With the approval of the State Board of Health, the State Planning Board, the Budget Bureau and the Governor and Council of State, a formal application was prepared and filed with the PWA State Engineer. The prospects looked bright until by Presidential decision PWA funds were limited to amounts much smaller than had been anticipated. It now appears that if we are to have a new laboratory, we must depend either upon a new appropriation by Congress, specifically for PWA, or upon further action by the North Carolina General Assembly. We assure you that we will continue the struggle to improve our laboratory facilities.

Since the conquest of syphilis is the next great objective of Public Health, the Laboratory has endeavored to improve its aids to the diagnosis of this disease. During the year, acceptable specimens of chancre serum have been received from every section of the State, thus demonstrating that the specimen container is satisfactory. There is now available to every physician in the State the Darkfield method for the examination of serum from suspected chancres. Early diagnosis thus made possible, permits starting of treatment in the primary stage with most satisfactory results both to the patient and the physician. Early treatment shortens the period of infectivity, an essential objective if progress in control is to be made.

The Laboratory has participated in the second study of sero-diagnostic procedures for syphilis. This study has been conducted by the Advisory Committee of the United States Public Health Service. Both our Wassermann test and the Meinicke Clarification Reaction were included. It will be several months before the results are announced. If the findings indicate the desirability of changing our methods, the changes will be made. The tests included in the first study all showed a disturbing number of presumably falsely positive reactions. We must urge that clinicians exercise caution in interpreting positive serological reports for specimens taken from patients with malaria. The same warning applies to a lesser extent for patients with tuberculosis, malignancy, fever, etc. The laboratory can not make a diagnosis. It merely aids in securing evidence upon which a diagnosis can be made by the physician. Every effort will be made to provide dependable laboratory evidence.

The conservation and development of laboratory facilities is of special importance to physicians. There are sent to the laboratory each year numerous specimens which can not yield worthwhile information. For instance, it is a waste of laboratory service to send a sample of water from an open well or an unprotected spring. The human eye can detect the potential danger in that source of water supply. Eighty per cent of such specimens will be found by the laboratory to be contaminated. For those reported uncontaminated, a false sense of security is developed and thus laboratory facilities are not only dissipated but actual harm is done.

If we use our discriminating judgment in selecting the type of specimens to be sent to the laboratory, we can conserve our present facilities and make possible a better laboratory service to each of the 100 counties in the State.


THE COMMUNITY SANITATION PROGRAM
ACCUMULATIVE MONTHLY TOTALS OF PRIVIES CONSTRUCTED IN NORTH CAROLINA DURING PERIOD DEC.1, 1933 to MAY 1,1936
NORTH CAROLINA STATE BOARD OF HEALTH
MAY 1, 1936
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43,432
44,233
45,584
46,871
49,422
52,607
55,128
57,445
59,640
60,293
61,114
62,013
62,089
62,816
63,948
65,550
68,135
70,830
CWA
ERA
WPA
AVERAGE MONTHLY PRODUCTION 2,442

SUMMARIZING:

In presenting an account of our stewardship, it is desired to call to your attention outstanding accomplishments that merit attention, and we are sure, meets with your hearty endorsement.

By seizing the opportunity and securing Dr. Milton J. Rosenau, an internationally known instructor in preventive medicine as director of the Teaching Unit at Chapel Hill, we were designated as the "Regional Training Center for United States Inter-State Sanitary District Number Two," comprising the States of Delaware, Maryland, District of Columbia, Virginia, West Virginia, Georgia, Florida, South Carolina and North Carolina, all named states contributing to the maintenance of the School, the first of its kind in the world.

I would like to call your attention again to the new activity. On January 1, 1936, through the coöperation of the Julius Rosenwald Fund, a colored physician was added to the Division of County Health Work as Field Agent to work on request of local health officers among the negro population in a program of public health education. This is the first service of this nature to be rendered in the United States.

With the one idea of rendering a greater and more wholesome service State and Industrial Commissioners, representatives from the U. S. Public Health Service and the North Carolina State Board of Health caused to be established within the State Board of Health a Division of Industrial Hygiene—this important public health activity to be administered by and through the Department of Health in coöperation with the State Industrial Commission—North Carolina being the first State to inaugurate such a program.

In order that North Carolina could participate in the funds coming out of the Children's Bureau, it was necessary to set up a State agency. Your officers of the State Board of Health were successful in securing such an agency within its ranks. As a result we have secured the privilege of manning and controlling the activities of three additional projects, namely: Maternal and Child Hygiene, Dental Hygiene program and the Division for Crippled Children.

THE CHAIR: You have heard the Secretary's Report. What is your pleasure?

DR. W. R. KIRK: I move that it be adopted.

Motion seconded by Dr. John W. Williams.

Question put by the Chair. Motion carried.

It was so ordered.

The meeting was adjourned.

THIRD GENERAL SESSION

Wednesday, May 6, 3:00 p. m.

The Third General Session was called to order by the President, Dr. Paul H. Ringer, on the north roof of the Battery Park Hotel.

Report of the House of Delegates was presented by the Secretary.

On motion the action of the House of Delegates including the election of officers was approved. (See page 70-71-72.)

The next item was the installation of President-elect C. F. Strosnider. Dr. Pepper presented Dr. Strosnider and he was installed as President of the Medical Society of the State of North Carolina for the succeeding year by the retiring President, Dr. Paul H. Ringer. Before doing so Dr. Ringer made a few appreciative remarks in retiring from the office. Following his installation as President, Dr. Strosnider made interesting remarks.

The President-elect, Dr. Wingate M. Johnson of Winston-Salem, was presented and installed into his office.

No further business appearing, the 83rd Annual Meeting of the Medical Society of the State of North Carolina adjourned sine die.

SCIENTIFIC SECTIONS

GYNECOLOGY AND OBSTETRICS

SURGERY

OPHTHALMOLOGY AND OTOLARYNGOLOGY

MEDICINE

PEDIATRICS

PUBLIC HEALTH AND EDUCATION

SECTION ON GYNECOLOGY AND OBSTETRICS

Wednesday, May 6, 2:00 P. M.
Ball Room George Vanderbilt Hotel

Dr. Thomas Leslie Lee, Kinston, Chairman

A NEW METHOD OF MEASURING THE PELVIS AND FOETAL HEAD

(Pelvicephalometry with Pre-Natal Weight Predictions)

By M. A. Pitman, Wilson

The fact has long been recognized by everyone interested in obstetrics that it is important for the well-being of both mother and child to know the relationship between the maternal pelvis and the foetal head. Both external and internal pelvimetry have been practiced for years by the use of such instruments as those devised by Baudelocque and Schultz. These instruments, when used externally, give information as to the size of the female pelvis, but can not be considered as being strictly accurate, for soft tissue, bone anomalies, and types of pelves have to be considered. There are five general types of female pelvis to be considered, namely:

(1) Anthropoid or ape-like
(2) Gynecoid or female type
(3) Android or male type
(4) Platypelloid or flat type
(5) Asymmetrical or one-sided

(Slide 1)

According to Moloy and Swenson, from a series of 268 cases the following percentages were noted:

(Slide 2)

	White	*Colored*
Gynecoid Type	41.4%	42.1%
Android Type	32.5%	15.7%
Anthropoid Type	23.5%	40.5%
Platypelloid Type	2.6%	1.7%
Number of cases	147	121

If internal measurements are attempted there is still the problem of inaccuracy; trauma, and the possibility of infection also to be considered. The older methods, even when practiced expertly, give no suggestion as to the size of the foetal head. For years roentgenologists have been attempting to devise some method for the purpose of measuring accurately the size of the female pelvis and also the size of the foetal head.

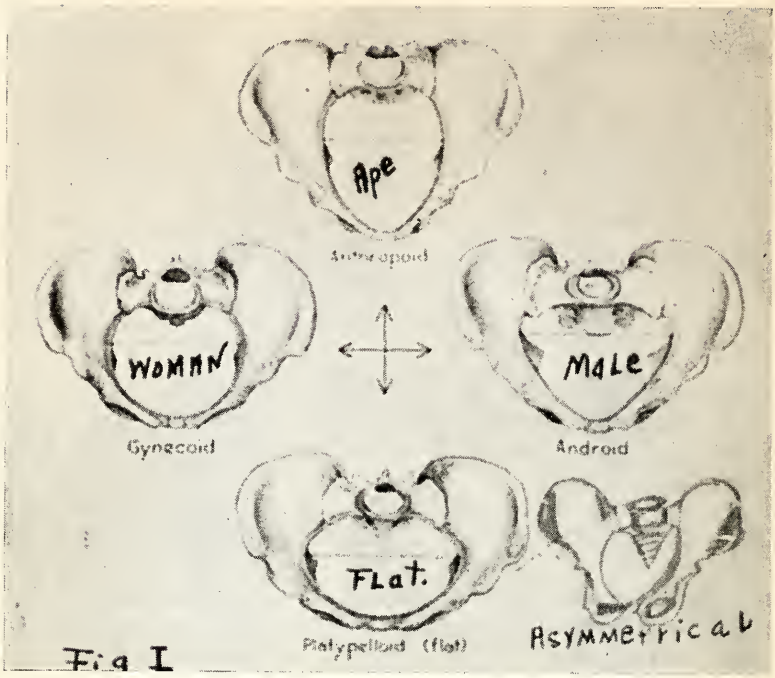


Fig. 1. Characteristic Inlet of Four Parent Types of Pelves. (Redrawn from a photograph, by the courtesy of Professor T. Wingate Todd, Western Reserve University.)

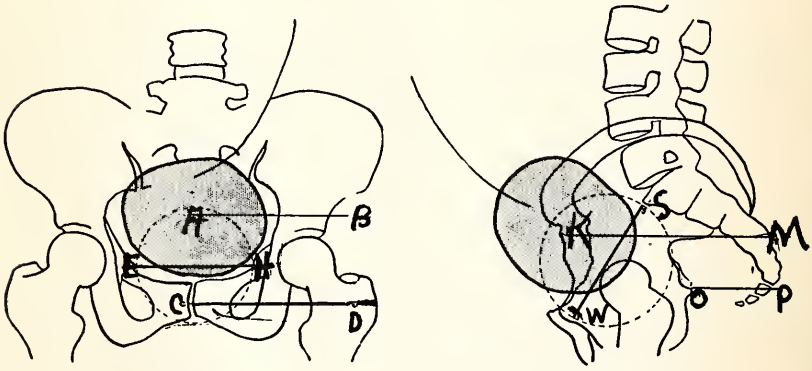
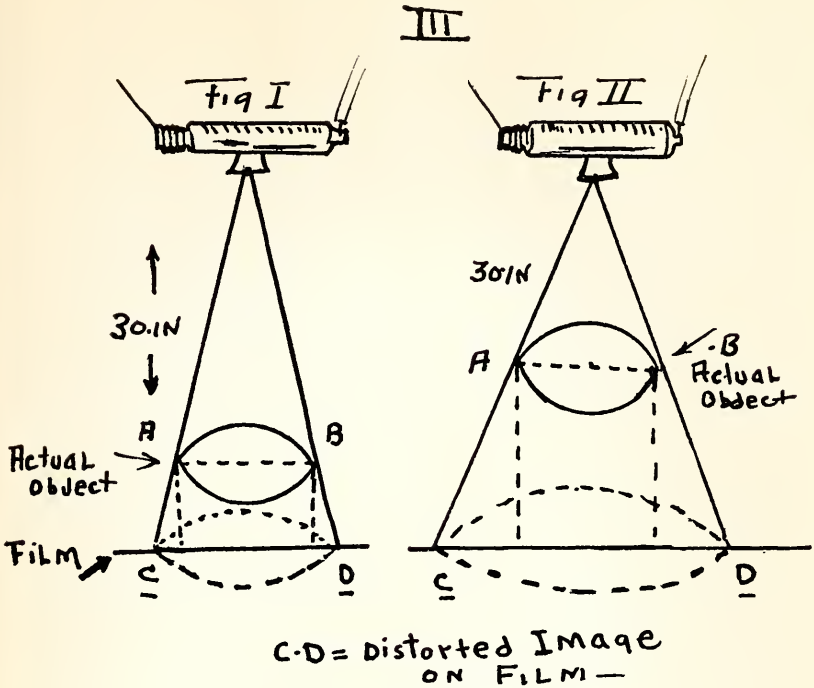


Fig. A

A.P.

Fig. B

Lateral



Such renowned men as Hodges, Moloy, and Manges have all devised methods which were accurate in their hands, but not practical to the average roentgenologist or obstetrician.

When an X-ray of any object is taken the picture shows the object on the film to be larger than its natural size. This variation in size is known as *distortion*. Distortion is dependent principally upon two main factors, first the distance of the X-ray tube from the film, and second the distance of the object to be X-rayed, from the film. To avoid complication I will attempt to illustrate distortion or magnification by a simple drawing.

We know that a radiogram of a pregnant mother will show the bony pelvis and the foetal head: however the above rule being true, it does not show either in their true size. Howard C. Moloy of New York City improvised a stereoscopic outfit whereby the dimensions of the head and pelvis can be approximated by measuring the image in space. Thomas has developed a method of pelvimetry which is accurate and widely employed. In this procedure the radiographic distortion due to magnification is determined by taking a second radiograph of a graduated, perforated, lead plate in the same plane that was occupied by the pelvic inlet. Others have constructed false centimeter scales which have proved to be accurate when the anode film distance is 30 inches.

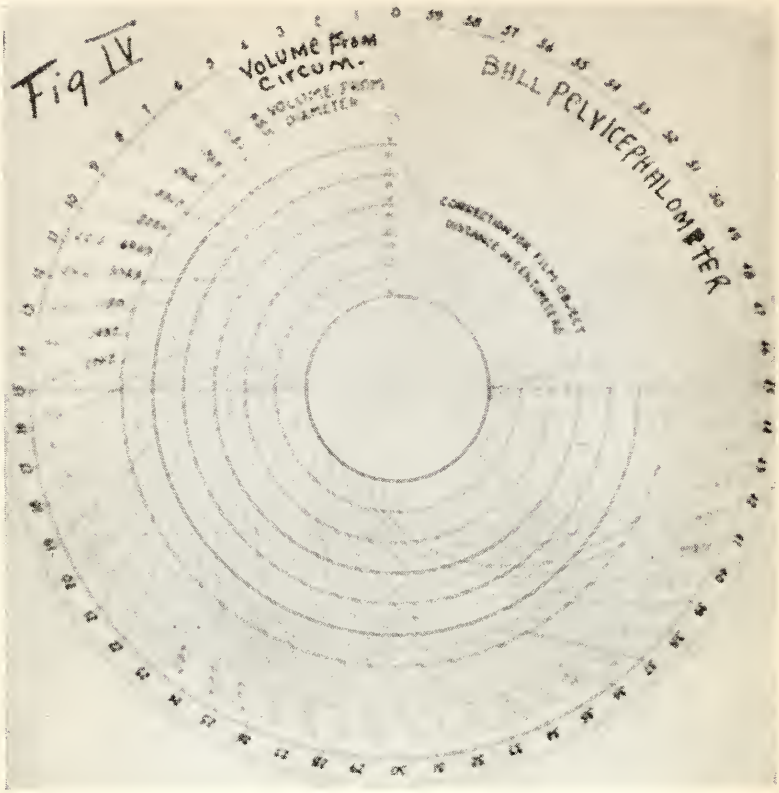


Fig. 2. A chart used as a dial on the instrument to correct the size of the object and film-object distance.

The latest and probably the most satisfactory technic for pelvimetry and foetal caphalometry is probably that which is devised by Dr. Ball of the Baroness-Erlanger Hospital, Chattanooga, Tennessee. This technic presents a new method of measuring the size of the foetal head, by tracing the perimeter or circumference of its radiographic image. It also gives you a comparison of the size of the head to the pelvis. It enables you to work out the volume of the foetal head in milliliters as compared to the volume capacity of the pelvic diameters. The distortion of film magnification is corrected by the calculator devised by Ball and called the *pelvicephalometer.*

(Slide 4)

This instrument which deals in delicate mathematics is capable of correcting distortion as previously stated and converting centimeter diameters into milliliter volumes of both head and pelvis. The *pelvicephalometer* is a combined circular rule and calculator. There are two tables printed on the dial. *Volume from circumference, and volume from diameter.* These

tables are for the purpose of *interpolating* linear measurements of a sphere into volumetric units, milliliters. There is also a pointer with figures representing distance in centimeters of the object being X-rayed, from the film, corresponding to a concentric circle on the dial. This arrangement makes calculation possible.

(Slide 5)

Two radiographs are all that are usually required. An anterior-posterior using Bucky-Diaphragm, 80 KVP-100 M.A. seconds. The anode distance in all cases must be 30 inches as the calculator is made for that scale. The second is a lateral view with exposure about three times that of the first. The two radiographs are placed in a viewing box for studying measurements. The A.P. radiograph figure A is measured by tracing the perimeter or circumference with the contact wheel on the inner border. Now the pointer on the dial registers the circumference in centimeters of the film image which is larger than the actual foetal head. (a) To reduce this distorted image to actual size it is necessary to determine the distance of the head from the film when the exposure was made. (b) To do this we go to figure B the lateral radiograph and measure the distance from the center of the skull to the posterior border of the sacrum. Then add the distance from the table top to the film which is usually 4 cm. This is the object film distance corresponding to a concentric circle on the dial, or correction chart. By moving the pointer to the intersection of this concentric circle with the radial line subjacent to the circumference measurement, the corrected size of the film image is read at the tip of the pointer. The pointer is easily shifted by rotating the contact wheel with the finger.

ILLUSTRATION

(Figure A)

A. P. Perimeter of foetal skull cranial image in A. P. Radiograph ..... 44 cm.
Distance from center of skull on lateral radiograph to the posterior border of the sacrum KM ..... 17 cm.
Distance from table top to film ..... 4 cm.
Film object distance ..... 21 cm.
NOW SHIFT the pointer until figure 21 on pointer intersects radial adjacent to 44 and read actual size at pointer tip ..... 31.2 cm.
This is now the actual or corrected circumference of foetal head in figure A as compared to perimeter reading of 44.
2 cm. are added for scalp giving total of ..... 33.2 cm.
Put pointer on 33.2 cm. mark and read on the table VOLUME FROM CIRCUMFERENCE which gives ..... 600 ml.
TO MEASURE THE PELVIC DIAMETER repeat process with exception of measuring from synphysis pubis to sacrum on B and Biischial spines. Shift pointer and read VOLUME FROM DIAMETER ..... 697 ml.

The true conjugate or distance from the symphysis to the sacrum and the distance between the bi-ischial spines are the only measurements necessary in the majority of cases, but in all border line cases the conversion of these diameters into milliliter volumes will give a more accurate com-

parison. The maximum degree of molding the head, possible without foetal mortality, has not as yet been accurately determined. Therefore as a safe guard, any case showing a foetal head volume of 150 milliliters greater than the volume capacity of the smaller pelvic diameter is one that should be observed closely.

In the series of cases which we have personally worked out, babies having heads of equal size or volume, have proved to have approximately the same weight, and correspond to the average birth weights and head circumference measurements compiled by Davison in his work "The Compleat Pediatrician."

Another important function of radio-pelvimetry is the determination of volume increase, or growth in the foetal head during the last month of gestation. We have measured at birth the circumferences of every baby's head in the Woodard-Herring Hospital, Wilson, N. C., for the past six months and find them to fall in a general group as follows:

(Slide 6)

TABLE I

Showing average weight of a child at birth compared to circumference of head.

	Body Weight	
Circumference	*Pounds*	*Ounces*
30.5 cm. (about 12 in.)	6	2
32.0 cm.	7	0
33.0 cm.	7	12
34.0 cm.	8	8
35.0 cm.	9	5
36.0 cm.	10	3

We have also X-rayed every primipara routinely during this period and have recorded the circumference of the head and the time elapsing before birth. From this information and the aid of the above table we have improvised a tentative chart of rate of increase in size of the foetal head which enables us to estimate for as much as a month before birth, the approximate weight of a child at birth.

TABLE II

Table showing weight of child at end of 36th week (confirmed by caesarean section) with calculated weight and circumference of head for each succeeding week until term (40 weeks).

(Slide 7)

		Body Weight	
	Circumference	*Pounds*	*Ounces*
36th week	30.5 cm.	6	2
37th week	31.0 cm.	6	6
38th week	31.5 cm.	6	10.5
39th week	32.0 cm.	7	0
40th week	32.5 cm.	7	6

This is based on our belief that the weight of a foetus increases by 20% of its weight at 36 weeks gestation, that is its weight increases 20% during the last month

of pregnancy. This increase, however, is not equally distributed for each of the four weeks but progressively as follows:

37th week	4 %
38th week	4½%
39th week	5½%
40th week	6 %
	20 %

TABLE III

Table similar to Table II showing weight of a moderately large child.

	Circumference	*Body Weight* *Pounds*	*Ounces*
36th week	32.0 cm.	7	0
37th week	32.4 cm.	7	4½
38th week	32.8 cm.	7	9½
39th week	33.3 cm.	7	15½
40th week	33.9 cm.	8	6½

TABLE IV

Showing weight of large child.

	Circumference	*Body Weight* *Pounds*	*Ounces*
36th week	33.0 cm.	7	12
37th week	33.4 cm.	8	1
38th week	33.9 cm.	8	6½
39th week	34.5 cm.	8	13½
40th week	33.0 cm.	9	5

TABLE V

Showing weight of extremely large child.

	Circumference	*Body Weight* *Pounds*	*Ounces*
36th week	34.0 cm.	8	8
37th week	34.4 cm.	8	13
38th week	34.8 cm.	9	3
39th week	35.4 cm.	9	11
40th week	36.0 cm.	10	3

These results were worked out in our cases, and we believe these tables are approximately correct. When a greater number of cases have been studied the results may show variations from those here reported. We regard this as a preliminary report of work which appears to have value and are confident that it is the initial step toward a test of clinical importance.

In conclusion we recommend that some form of pelvicephalometry be employed in every first pregnancy in which there arises a question as to disproportion. By doing this we are making progress towards lowering the embarrassingly high maternal and fetal death rate, now prevalent in our State.

TO MEASURE THE FETAL CRANIAL SKULL			
Perimeter of fetal skull cranial image in A-P radiograph	44 cm.		
Distance from center of skull on the lateral radiograph to the posterior border of the sacrum		17 cm.	
Distance from the table top to the film		4 cm.	
Film-object distance		21 cm.	
Shift the pointer until figure 21 on the pointer intersects radial line subjacent to 44 and read actual size at pointer tip			31.2 cm.
Circumference of cranial skull image on lat. radiograph	43 cm.		
Distance from the center of skull on A-P radiograph to a plane intersecting greater trochanter		16 cm.	
Distance from the table top to the film		4 cm.	
Object-film distance		20 cm.	
Shift pointer until 20 intersects 43 radial line and read from the dial at pointer tip the corrected size			30.3 cm.
The mean measurement of perimeter of fetal cranial skull			2)61.5 cm.
			30.8 cm.
Add 2 cm. for scalp			2 cm.
Perimeter of fetal cranial skull plus the scalp			32.8 cm.
Read from the table on the dial VOLUME FROM CIRCUMFERENCE the size of the cranial skull plus the scalp	600 ml.		
TO MEASURE THE PELVIC DIAMETERS			
The film image of anteriorposterior diameter of the pelvis on lateral radiograph	17 cm.		
Distance on A-P radiograph from symphysis to trochanter		16 cm.	
Distance from the table top to the film		4 cm.	
Object-film distance		20 cm.	
Shift the pointer until 20 intersects line subjacent to 17 to determine true conjugate diameter			12.3 cm.
Measure with the pelvicephalometer on A-P radiograph the distance between the biischial spines	13 cm.		
Measure on the lateral radiograph the distance from the ischial spine to the posterior border of the sacrum		7 cm.	
Table top to the film distance		4 cm.	
Object-film distance		11 cm.	
Shift pointer until 11 intersects radial line subjacent to 13 and read from the dial at tip of pointer the corrected pelvic diameter on the dial			11 cm.
Read from table, volume from diameter the volume capacity of the smallest pelvic diam			697 ml.
The volume of the fetal cranium plus the scalp is 600 ml. (c.c.)			600 ml.
The volume capacity of the smallest pelvic diameter is 697 ml. (c.c.)			697 ml.

THE CHAIR: Dr. Pittman's paper is now up for discussion by Dr. Paul Neal of Raleigh.

DISCUSSION BY DR. NEAL

I think Dr. Pittman is to be congratulated on this highly technical paper he has offered us. It seems as though this modern method were going to be pretty well tied up with the X-ray. In a number of our cases I think this is going to be a good help. I would like for Dr. Pittman to tell us more. I think the most remarkable thing in his paper is the uncanny method by which they determine the birth weight by the circumference of the head.

DR. W. Z. BRADFORD, Charlotte: I think that Dr. Pittman has the method here by which the size of a child can be evaluated by the measurements of its head at the time it is delivered. It would be of great value in a case of toxemia in pregnancy, whereby you will know this child can survive any emergency at that time.

I have been very much interested in the subject of X-ray of the pelvis, for the past two years, and have been X-raying a good many by the method of Dr. Malloy, and have spent some days with Dr. Malloy in going over his work.

The thing that impresses me as much as anything else is what labor can do.

Dr. Malloy says 25% of his cases have been anthropoid, commonly found in negroes.

This includes 85% of the women negroes, where we find a large number of abnormal pelvices.

I can't see how we could prognose all labor. And it is a machine for this type of woman with anthropoid pelvis, but I don't think we could prognose the outcome in labor by any mechanical method.

DR. R. A. ROSS, Durham: That takes into account as to whether or not it can anticipate the transverse by roentgen rays, and the next in regard to the breech presentation?

DR. KERMIT E. BROWN, Asheville: I would like to ask Dr. Pittman, in these cases, how many times he has found measurements to be misleading as far as the head is concerned.

THE CHAIR: If there are no further discussions, Dr. Pittman will close the paper.

DR. PITTMAN: Mr. Chairman, if I understand Dr. Ross correctly, I will try to answer his question first.

You want to know whether this gives you the pathological outlet? Yes, and the Biischial spine gives you here the nearest pelvic diameter, which can be converted into milimeters absolutely, if you want to. After you get this you can figure the volume of either of those. But the one that is usually the smaller is the one you take, then this pelvicephalometer will give you the measurement of the smallest pelvic diameter, and that

is not more than 150 m.m. less than actual measurement. This is your true. If you get the other you will have to get Biischial spine. In every case we have tried so far, it has worked out pretty accurately, and Dr. Ball has done more work on this than anyone else, and he claims that this smaller pelvic diameter is approximately, or about the size of the foetal head diameter. In these there is 150 m.m. difference.

You want to know what would happen if you had a breech presentation?

You would make the same measurements, except you would make two other plates. You would measure from there—take two plates of the pelvis, and measure the pelvis, and get the measurements of the baby's head, and compare it with the pelvis diameters.

I believe Dr. Brown asked whether or not it was misleading?

So far we have done several Caesarean sections on account of this. So far it has been fairly accurate. We have come to rely on it.

The Chair announced the next paper by Dr. Kenneth L. Dickinson and Dr. Ivan Procter of Raleigh.

A STUDY OF ECLAMPSIA AT THE MARY ELIZABETH HOSPITAL

By Ivan Procter, M.D., and Kenneth Dickinson, M.D., Raleigh, N. C.

It has been suggested that an ideal approach to an understanding of the problem of toxemias of pregnancy as it exists in the State of North Carolina could be made if all the divisions of medicine dealing with the toxic gravida contributed their experiences and their statistics into a symposium on the subject. Of course this would mean that each section of the State be represented as well as the obstetrical specialist, the general practitioner, the general surgeon, the small private hospital and the large charity clinic. Certainly we know that there may be a considerable variation in the aspect of any disease depending upon locality, social status, race, etc. So it would seem that a step in progress may be taken if the available works of all these groups could be systematically collected and presented. In this way there should be available a "bird's eye" or cross section view of the toxemias of pregnancy in the State of North Carolina. This paper is a study of eclampsia as seen on the service of Dr. Ivan Procter at the Mary Elizabeth Hospital, Raleigh. It covers the years 1922 to 1935 inclusive and consists of eighty-nine cases, all of which to the best of our ability come definitely in the classification "pre-eclampsia" or "eclampsia."

DESCRIPTION OF THE SERIES

These cases were eventually hospital cases, although sixty-six, or seventy-four per cent, were referred by other physicians and therefore received all of their pre-natal and in most cases some of their pre-eclamptic

and eclamptic care at home. Many of them were admitted in a far advanced state of toxemia or even in extremis. This is stated in no criticism of the referring doctor who in many instances was seeing the patient for the first time on the day that he sent her into the hospital, or by necessity was seeing her at irregular and infrequent intervals due to locality or other unavoidable factors. Twenty-three, or twenty-five per cent, received their pre-natal care here.

So far as this series is concerned our criteria for admission of cases to it have been: The gravid woman with no history, physical, or laboratory evidence of previous acute or chronic nephritis, or cardio-renal disease or recent severe illness of any nature, who in the latter months of pregnancy develops a rising blood pressure and shows albumen in her urine. This is in no sense an attempt to define pre-eclampsia or eclampsia but constitutes a simple working basis for our present study. The acceptance of it has permitted us to rule out a great many of the doubtful and border line cases that might otherwise have been included in the indefinite group to which has been given the term "pre-eclampsia."

CASES WITH CONVULSIONS

Before delivery	21 cases
During delivery	4
After delivery	7
Before and during	3
During and after	3

By "before delivery" is meant here that period of time preceding complete dilatation of the cervix; by "during delivery" is meant that period from complete dilatation of the cervix including birth of the child; by "after delivery" is meant the period of time after birth of the child.

From this it is seen that in this group by far the greater majority reach the convulsive stage before the cervix is completely dilated although convulsive seizures may occur at any time or at more than one time in the sequence.

SEASON, YEAR, GRAVIDA AND AGE OF PATIENTS

Jan.	8 cases	April	8 cases	July	9 cases	Oct.	10 cases
Feb.	4	May	6	Aug.	10	Nov.	6
Mar.	8	June	3	Sept.	9	Dec.	9

In a series as small as this, the variation according to season is too small to permit of any conclusions but it would seem from it that a tendency to an increase in frequency during the fall months, is indicated.

1922	2 cases	1926	6 cases	1930	13 cases	1933	3 cases
1923	4	1927	5	1931	6	1934	1
1924	8	1928	14	1932	1 cases	1935	8
1925	8	1929	11				

Here forty-two per cent of pre-eclamptic and eclamptic cases occurred in the years 1928, 1929, 1930. To be economically minded, this could well

give rise to some speculation concerning the effect of the cyclic variation of periods of prosperity and of depression upon the welfare of the pregnant woman. Williams states that during the period of war-time frugality, the incidence of eclampsia in Europe was considerably lower than during the preceding period of comparative abundance.

Gravida I ..... 36 cases	Gravida IV ..... 5 cases	Gravida VII ..... 4 cases
Gravida II 14	Gravida V 4	Gravida VIII 1
Gravida III 17	Gravida VI 3	Gravida IX 4
	Gravida X..... 2 cases	

Forty per cent of these cases were in the primigravida, a figure somewhat lower than that given by most observers.

Consideration of statistics of age of the eclamptic and pre-eclamptic is probably without great value. Its importance as a contributing factor is difficult to decide. Just as would be expected from the number of Gravida one and two in the above, and from obstetrical statistics in general which indicate that the period of greatest fertility lies between the ages of twenty to thirty, so here the largest incidence of toxemia lies within that age period. This is shown in the following table:

Ages 15-19 inclusive	11 cases
Ages 20-29 inclusive	45 cases
Ages 30-39 inclusive	23 cases
Ages 40-50 inclusive	3 cases

Fifty per cent of all cases of pre-eclampsia and eclampsia occurred in pregnant women in the age group twenty to thirty.

GESTATION, POSITION, FETAL DEATHS, SEX

Concerning the period of gestation our material merely accentuates the fact that eclampsia is a toxemia of late pregnancy. However in this series, that would be so by the nature of the precepts set for inclusion within this study and stated previously in this paper.

Number at 5 months	5 cases
Number at 6 months	9 cases
Number at 7 months	11 cases
Number at 8 months	11 cases
Number at or about at term	44 cases

Fetal position would seem to have no bearing upon the frequency of this toxemia. The incidence of the various positions here is in the same order as reported for the non-complicated pregnancy. This is shown in the following table:

O. L. A.	27 cases
O. D. P.	11
O. D. A.	6
O. L. P.	1
Breech	4
Transverse	1

Certainly the number of breech presentations in this small group is disproportionately high. However fifty-four per cent of all cases were O. L. A. in position.

Whatever this toxemia is to the mother, it is certainly a far greater calamity to the child. Here sixteen cases were still-born and six died within twenty-four hours of delivery; the fetal mortality therefore becomes twenty-four per cent. This compared with our maternal mortality of twelve per cent would indicate twice the incidence.

Forty of our series resulted in female offspring; and twenty-eight were male. With fifty-nine per cent of eclamptic women delivering females and forty per cent delivering males, one might hastily conclude that sex were a factor in the toxemia. However the difference of nineteen per cent in so small a series seems inconclusive.

EVALUATION OF SYMPTOMS

The physician may justly ask, "Upon what symptom shall we place most reliance in the early recognition of these cases?" It is Dr. Procter's opinion unsupported as yet by our own statistics, that a careful and frequent watch for an abnormal weight gain (occult edema) is a very important symptom in early diagnosis. In examining a few of the so-called classic symptoms our findings were:

BLOOD PRESSURE

Highest blood pressure 150-174 inclusive	36 cases
Highest blood pressure 175-199 inclusive	17
Highest blood pressure over 200	16
Highest blood pressure under 150	19

Considering only systolic pressures.

Here we were impressed by the number of patients showing the most severe symptoms with a systolic pressure of one hundred and fifty or under. It seems important to emphasize again that one must not diagnose impending eclampsia on the basis of average blood pressure standards. It is the blood pressure that is rising above the normal for the individual patient that is important. It is probable too that the diastolic pressure is a more delicate indicator than the systolic, or at least it is one that is too frequently disregarded.

EDEMA

Legs	46 cases
Legs, face, sacrum	12
Locality not stated	6

The number of cases showing a definite edema, more than could be accounted for by other than toxic causes, was seventy-one per cent. Possibly because most of these cases were seen late in their toxemia, our impression is that edema that can be observed is a symptom that develops comparatively slowly and late, although frequently. It seems wise in not

waiting until the development of this symptom before instituting a rigid pre-eclamptic regime.

HEAD AND EPIGASTRIC PAIN

It is difficult to evaluate the symptom of headache in the pregnant woman. Practically all of them complain of it at some time in their pregnant career. However the occurrence of severe headache in the latter months of gestation should be suspected.

Number complaining of severe headache	15 cases
Not severe but abnormal for the patient	23
Number complaining of epigastric pain	13

Headache in a degree that is abnormal for the woman as judged by the previous course of her pregnancy would appear to be an important symptom. Severe epigastric pain is always an important symptom.

VISUAL CHANGES

Thirteen cases complained of marked blurring of vision or blindness. This is a fairly late and comparatively infrequent symptom although an important one. In these cases it was invariably associated with the most fulminating type of toxemia.

URINARY FINDINGS

One hundred per cent showed urinary albumen.

Number graded +1	22 cases
Number graded +2	11
Number graded +3	14
Number graded +4	21
Number coagulated	22
Number with casts	64

It is not necessary to stress the importance of the value of urinary albumen in the diagnosis of toxemia. Treatment delayed or compromised on the basis of quantitative standards of urinary albumen is never justified. The occasional case goes to convulsion without the appearance of urinary albumen until afterwards.

TREATMENT

A discussion of the treatment of eighty-nine cases dispersed over a period of fourteen years is of historical rather than of practical interest. The topic may be briefly summarized in the following.

In most cases conservative treatment has been based on the Strogonoff or a modified Strogonoff technique. The number of cases treated medically only (including outlet forceps and artificial rupture of membranes) was forty-seven. The number treated surgically, usually in addition to medically (as by bags and mid or high-mid forceps, version and extraction,) were forty-two.

Eleven cases were associated with other abnormalities of pregnancy such as contracted pelvis, placenta previa, premature separation of placenta, retained placenta and breech. These account for some of the more radical surgical procedures appearing in the following table. Of the eleven deaths in this series, seven occurred in those treated medically only and four in those treated both medically and surgically.

Number treated with the Vorhees bag	34 cases
Number treated by version	4
Number treated by Cesarian Section	2
Number treated by mid and high-mid forceps	8
Number treated by artificial rupture membranes	11
Number treated with low or outlet forceps	8
Attempted version	1
Manual removal of placenta	2
Vorhees bag plus version or forceps	12

MATERNAL MORTALITY—DISCUSSION OF DEATHS

The maternal mortality was twelve per cent, or eleven deaths. Of these all were in the referred group receiving their prenatal care elsewhere and were cared for here only for period of their hospital stay. Nine of these were in the hospital less than twenty-four hours before death intervened. If we are permitted to subtract these nine cases from the total of eleven deaths, a corrected maternal mortality of approximately two per cent is obtained. Brief summaries of those eleven very interesting patients follow:

Mrs. G. S. No. 3573. Dec. 26, 1927. Term. Ref.

Admitted to the hospital by ambulance. Complaint was of severe headache and vomiting. Partially comatosed on admission. Convulsion shortly after admission. Treatment was medical, episiotomy and low forceps. Blood pressure before delivery was 220/125. Urine coag. Baby narcotized and died within a few hours. Mother's pulse elevated and thready; pulmonary edema and death. Total hospital stay 13 hours. First seen on admission.

Mrs. H. W. No. 1387. March 15, 1924. 8 mos. Ref.

Complaint was of severe headache. Had five convulsion at home. Had two convulsions on way to hospital; one convulsion immediately after admission. Blood pressure 165/115. Urine coag. Treatment was medical plus Vorhees bag. Still birth. Mother developed pneumonic consolidation right lower lobe. Death followed. Total hospital stay 5 days. First seen on admission.

Mrs. J. H. R. No. 2140. April 1925. 8 mos. Ref.

Admitted in coma. History of fifteen convulsions in past 12 hours. Two convulsions while in the hospital. Puffiness of eyes and ankles. Blood pressure 210/110. Urine coag. Treatment was medical plus Vorhees bag and low forceps. Still birth. Patient expired. Total hospital stay 16 hours. First seen on admission.

Mrs. W. C. S. No. 4555. March 1928. Post partum. Ref.

History of considerable weight gain during her pregnancy. Had a convulsion following a home delivery. Another convulsion followed. Blood pressure 130/80. Temp. 102. Alb. 4+. Developed pneumonic consolidation left lower lobe and expired. Treatment medical. Total hospital stay 12 hours. First seen on admission.

Mrs. C. R. S. No. 7679. October 1930. Post partum. Ref.

Admitted in coma after a home delivery. Had had a convulsion three hours after delivery and one convulsion occurred after admission to the hospital. Albumen 2+, urinary suppression. Treatment medical. Expired. Total hospital stay 18 hours.

Mrs. R. B. U. No. 6067. November 1929. 8 mos. Ref.

Admitted in coma; history of several convulsions at home. Pulse poor, heart enlarged; heart tones poor. Albumen 4+. Treatment medical. Spontaneous still-birth. Mother died of cardiac failure with pulmonary edema. Total hospital stay 2 hours 20 minutes.

Mrs. H. W. W. No. 3241. October 1926. 8 mos. Ref.

Admitted in coma with a history of many convulsions at home. Blood pressure 180/100; albumen coag. Treatment medical and low forceps. Still birth; mother expired. Total hospital stay 3 hours.

Mrs. J. J. J. No. 4939. July 1928. 9 mos. Ref.

History of many convulsions previous to admission. Two convulsions while in the hospital. Patient described as in extremis. Treatment was medical. Lapsed into deep coma and was delivered while comatosed by low forceps preceded by manual rotation. Blood pressure 130/80 after delivery. Pulse 150. Albumen coag.; many casts. Temp. 105. Child lived; patient expired. Total hospital stay 18 hours.

Mrs. J. K. No. 3387. September 1926. 9 mos. Ref.

Admitted in coma; history of many convulsions at home. Blood pressure 210/120. Albumen coag. Attempted version failed. Delivered spontaneously. Three convulsions following delivery; deep coma and death. Total hospital stay 14 hours.

Mrs. W. B. B. No. 4941. July 1928. 8 mos. Ref.

Complaint on admission was of edema of the ankles and a 13-lb. weight gain in one month. Albumen and casts 4+. Blood pressure 150/100. Premature separation of placenta and transverse position. Treatment No. 5 Vorhees bag and internal podalic version; uterine pack for hemorrhage. No convulsions. Pulse rose to 160; became imperceptible. Still birth. Total hospital stay 7 days.

Mrs. C. L. No. 10,630. October 1935. 9 mos. Ref.

History of many convulsions at home. One convulsion on admission; described as in extremis. No prenatal care. Blood pressure 170/130; pulse

104. Urine coag. Generalized edema. Treatment dehydration (Temple-Fay) spinal taps. Patient not in labor. Patient expired; baby expired in utero. Total hospital stay 4 hours.

SUMMARY

1. A series of 89 pre-eclamptic and eclamptic cases are presented.
2. 74% of these were referred.
3. 41% went to the convulsive stage.
4. The majority of cases had convulsions before delivery.
5. Most of our cases of this toxemia occurred in the fall.
6. 42% of these cases were in the years 1928-29-30.
7. 40% of these cases were in the primagravida.
8. 50% of all cases occurred in pregnant women in the age group 20 to 30.
9. These cases were all in or about the later trimester of pregnancy.
10. The fetal mortality was 24% and O. L. A. position was the most frequent.
11. Blood pressure change and closer observation of the diastolic pressure are important.
12. Visible edema is usually a late symptom and should never be awaited before instituting treatment.
13. Headache is an early and frequent symptom but difficult to evaluate.
14. One hundred per cent of all cases had urinary albumen.
15. Maternal mortality was 12% with a corrected mortality of two per cent.
16. Presentation of case histories.

The Chair announced the appointment of the Committee of the Moore County Award, as follows:

Dr. W. Z. Bradford, Charlotte,
Dr. Kermit E. Brown, Asheville,
Dr. R. A. Ross, Durham.

Also, the Nominating Committee:

Dr. Ivan Procter, Raleigh,
Dr. Bayard Carter, Durham,
Dr. R. A. White, Asheville.

DISCUSSION LED BY DR. BAYARD CARTER, DURHAM

I would like to state these instances of our figures, and state frankly at the outset that in our surveys, one out of every four women who come to the hospital are admitted for toxemia.

What lies back of this fateful and hideous state of affairs, what leads to these figures? Because the State of North Carolina requires a follow-up survey not less than five months after birth. In other states that is not so. The cry against several Southern states is mortality of infants is too high. I think it is a great thing to be said of the profession that when these patients get to the hospital earlier, the doctor is only too glad to get them off his hands and give them proper care.

My opinion still holds that the reason these people die, and these infants die, we have a very peculiar clientele with which we deal. Sixty-five per cent of the maternal deaths, and sixty-five per cent of infant deaths come from the rural districts.

I can recall in detail 120 cases referred to the hospital by a physician, for interrupted pregnancy. But when you have figures of this sort that were taken on reports of 503 admissions, 148 convulsive, and gives us an incidence of toxemia 29.24.

The reason we had for these toxemias, is we have a very ignorant colored group with which to deal.

The colored contributed 5.46% to eclampsia; the white 5.34%. It is true the colored group runs one to two per cent higher. We are not only concerned with convulsive toxemia; we are interested in the nonconvulsive toxemias. The colored contributed 13%; the white 29%.

It is hopeless for us, as a profession to attempt to control this infant mortality. It is true that there are abuses. It is true that many physicians look on obstetric cases as a nuisance, and something to be free of as soon as possible. I think that is unfair.

Each year more and more cases are sent to the clinic with the question, shall this pregnancy be continued or shall we interrupt it?

This question of interrupting pregnancy is largely one touching the condition. I am more in favor of interruption of pregnancy when you see the figures, where you have got these old cardio renal diseases where you have the evidence in the patient early in pregnancy, the question is: is it advisable for this woman to carry out this pregnancy? My argument is that the sooner we make up our mind that we are going to have these bad results, the sooner the medical profession becomes articulate. You have got no educational program in these districts from which the majority of toxemia patients come, until you get the patient to the doctor previously, and when you get them to the doctor and he does nothing for them, it is his fault. But I do feel that there is nothing done to stop this toxemia. You have got to meet the question fairly and early, and we have got at least, as a profession to make up our minds that instead of aborting women, we have got to take the bull by the horns and do what other professions have done, where you have got cardiac renal disease when that woman comes to you in pregnancy.

For that reason I would like to subscribe heartily to Dr. Pittman's program. In figures we are willing to pool.

The eclampsia rate has crept up to 4.6%. The known toxemia rate in the last 500 has crept up to 33%. Most of them had not been seen by any physician. It seems that the paper which has just been presented to us, is the type of paper we can all use. We should gather the facts together, and put our heads together, and ask what can we do about it? My answer is this: we can do nothing unless we can get the patients to us, and that means to you and to me. I really feel that it is in the interest of the profession to wake up to the fact that these things are really being checked upon. We will pool our results and see if there is any method whereby we can cut down these accidents of toxemia.

We are getting away from the idea of a Vorhees bag. We think simple rupture of the membrane is the only conclusion. We do not consider pre-eclampsia an indication for Caesarean, but instead of lowering the deaths, in my mind they are definitely on the increase. I should think any obstetrician, who would handle the service, and any practitioner who handles any part of it, would certainly come under the program that Dr. Pittman has there.

DISCUSSION BY DR. M. S. BROUN, OF ASHEVILLE

Instead of crowding all our bad problems of toxemia in any stage, taking them as a whole, it seems to me it would be better to separate all cases, particularly such as Dr. Carter was talking of, particularly those that haven't been seen by any doctor, and classify them in one group; and in group 2 those who have been under the care of a physician, and give to those patients the best we have. If the public could see those two decrease in comparison, it would be of some advantage in every way, and an advantage in this particular line.

DISCUSSION BY DR. IVAN PROCTER

Gentlemen, this review, for which I want to thank Dr. Dickinson for his very painstaking work, because it is a job to get up all that data out of my records, certainly out of the hospital records. He worked diligently at it, and I think did a much better job than I could have done.

We worked this out several months ago to learn ourselves the actual mortality, to learn the type of cases that died, and the type of treatment that we thought most successful. The review was presented here by request, and it had not been prepared just for this meeting.

Dr. Dickinson brought out the facts about the mortality, and we did not make any calculated mortality percentage here to look good, but to show up the fact that 12% gross mortality, and two per cent, if we took out the cases that died the first day of admission, leaving 10% that we might work on. It is possible, as Dr. Carter said, if we could see those cases earlier, we might alter or lower that gross mortality rate from 12% to possibly 2%.

I am asked first as to still births, or fetal mortality. There were 13 out of 22, as Dr. Carter called attention to. They were all premature.

As to Caesarean, we have stated before that we thought eclampsia did not call for any operative treatment as Caesarean section, only upon the basis there was an X-ray, or where the patient with delivery by the vagina is going to undergo severe trauma.

Now, as to the diagnosis. Dr. Dickinson has brought that out, about the blood pressure, and we feel that the diastolic pressure would be more important. We have studied a number of these cases, followed up six months after delivery, and we found 25% of those cases six months after delivery to have both albumen and elevated blood pressure, and that is important from the standpoint of treatment, and I will bring out at the last of my remarks, as to the treatment. This gives the treatment of a series of cases over a period of 14 years. We have passed through a number of phases of the period, from the semi-radical to the conservative, and we do not use the Vorhees bag, Dr. Carter, and have not for several years. At that time we thought it was the thing to deliver these patients. We feel now that the treatment should be conservative. That treatment should be medical, and in later years we have been following a modified Strogonoff treatment, and that the future—in the next few years will probably bring out the proper treatment of that type, in the case of the eclamptic patient.

We have for ten years or more contended and presented it to this Society—that any pre-operation for home delivery was not important, that that patient should be put absolutely at rest—that means in bed, and it does not mean to be allowed out of bed for anything; that that patient should have complete physical rest, should have systematic thorough elimination, and especially intestinal elimination, and should be on a milk diet. If that patient is given five to ten days of trial under that regimen, and the symptoms of eclampsia do not subside, there is a definite and positive indication for the termination of pregnancy at that time.

We think that our records have shown that the continuation of pregnancy under such circumstances is not only inviting disaster, but shows some damage to the kidneys at a later date.

DISCUSSION CLOSED BY DR. DICKINSON

Just in answer to the statement that it would have been interesting to have some reports on (edema), we did not collect those statistics. I think it is an excellent suggestion. I am sorry that we did not have them.

THE MANAGEMENT OF OBSTETRICAL HEMORRHAGE OUTSIDE THE HOSPITAL

By Dr. J. Street Brewer, Roseboro

Dr. Brewer: While I am on my feet, and just before I start my paper, I want to say just a word about Dr. Carter's very interesting paper. Dr. Carter brought out the point about getting the patient to the doctor. Now, that can be done. I do not think it is to make any boast of what I

have been able to do, but merely to emphasize that in the position which I take as an average general practitioner—it can be accomplished.

When I first started practicing, I hardly ever got a case when they didn't call me when the woman was in labor.

In 1930, '31, '32 and '33, I believe my records show that more than 90% of the obstetric cases, which I handled—and any average general practitioner of North Carolina can do the same—came to me early enough for me to have the opportunity to give them what I believed to be the general pre-natal care.

If each practitioner who does obstetrics would appoint himself a committee of one in his locality, and would carry the gospel of pre-natal care of women with whom he comes in contact, by that way I think we could secure for the women in North Carolina a higher degree of pre-natal care than they are now getting.

I do not have any statistics about this, but I believe in education with my own work. Just a rough estimate—I would say that 80% of the pregnant women of our section have a reasonable amount of pre-natal care, and I believe if I were to go into it, and look up the statistics of the county we would find a low record of eclampsia in the county, for a rural agricultural section.

When Dr. Lee asked me to prepare a paper on the management of obstetric hemorrhage outside a hospital, I didn't know how to go about it. First, of course it is a fact, that a considerable amount of obstetrical hemorrhages occur outside a hospital. We are all aware of the fact. I like to get them in if possible, but sometimes it is impossible to get the pregnant woman in the hospital before something has to be done.

With this in mind, the only way of tackling the problem is to go at it, as I see it, and try to meet it myself.

I hope somebody here will give me some enlightenment, and show me a proper way to reach these cases.

(Reads, as follows)

At first thought one would perhaps think that there should be very little difference in the management of obstetrical hemorrhage outside than in the hospital. But upon reflection one recognizes that time and place, the presence or absence of skilled assistance and the availability of asepsis may greatly alter the things that may be done or should not be done in the presence of obstetrical hemorrhage. As a rule it may be said that the occurrence of hemorrhage in a patient at home frequently finds the physician ill-prepared to meet the demands of the case. He is usually without trained assistance and aseptic technique is difficult to institute and maintain. However, when there is time for preparation and proper attention is given to details a fair degree of asepsis can be practiced even in the home of the average parturient. And it hardly is necessary to mention that there are few obstetrical emergencies that are so urgent that one should not

take time to institute whatever degree of asepsis the circumstances admit. The loss of a little more blood may well be compensated by steps taken to avoid infection.

The obstetrical hemorrhages may be classified into those (A) occurring during early pregnancy; those (B) occurring during late pregnancy and those (C) occurring during parturition or soon thereafter. The hemorrhages during early pregnancy have to do with abortion, either threatened, inevitable, incomplete or complete and rupture of ectopic gestation. The hemorrhages during late pregnancy have to do with placenta previa and premature separation of the normally situated placenta. Those during parturition or soon after have to do with the two just mentioned, retained placenta and also those due to lacerations and post-partum hemorrhage from the uterus.

The management of abortion depends upon the degree to which it has progressed when the physician is called. Threatened abortion is to be treated by bed rest, the administration of nervous and uterine sedatives, morphine in some cases, the avoidance of intravaginal manipulations and the use of enema instead of laxatives and purgatives. The duration of this treatment may be from a few days to several weeks. Many women have a tendency to abort throughout the early months of pregnancy if they are on their feet and the pregnancy can only be continued by keeping them in bed for several weeks after all threat of abortion has passed. In these cases as in those of habitual abortion the administration of anterior-pituitary-like hormone is of apparent value. I recall the case of one woman who had lost eight successive conceptions between the third and seventh months and in whom the ninth pregnancy was carried to a successful conclusion by keeping her in bed from the beginning of the third month until the delivery of an eight-pound boy at term.

When it has been decided that abortion is inevitable the patient may be sent to a hospital, or, if circumstances alter the case, and the physician feels himself capable, he may in the patient's home under narcosis or light ether anesthesia gently dilate the cervix, if necessary, and introduce a firm pack of sterile gauze. Within 24 to 48 hours the gauze should be removed and if the product of conception does not come away with the gauze it may be removed by the gloved finger or the placental forceps and the blunt curette.

In many instances when the physician is called to attend a case of abortion he finds that the process has been going on several hours or days, the woman is in bed with profuse hemorrhage, severe, cramp-like pains and if the fetus has not passed it is evident that abortion is inevitable and the patient should be immediately prepared for operation and under strict aseptic precautions the uterus is emptied and cleaned of its contents. If the cervix is sufficiently dilated the procedure may usually be accomplished without anesthesia. Not infrequently it will be found necessary to dilate the cervix which may be done under light ether anesthesia. The sharp

curette should not be used, but gentle curettage may be done with the blunt instrument. By the use of the finger one may feel more certain that the uterus has been thoroughly evacuated. I have never practiced irrigating the uterus as some have done in these cases. Pituitrin and ergot should be given and if the bleeding does not soon cease a strip of gauze may be introduced and left for a few hours. This, however, is not often necessary. I am aware that in many hospitals in the case of incomplete abortion the practice is, in the absence of profuse hemorrhage, to wait for a period in the hope that with the use of oxytoxics the uterus may be encouraged to expel its contents. This is probably all right when the patient and physician are near each other as in the hospital, but with the patient in the home and the physician busy and maybe out of reach for hours at a time I consider the prompt removal of the ovum in the presence of incomplete abortion the best practice. Infected abortion of course alters the practice, but it is not within the scope of this paper to go into the management of that complication.

The rupture of an extra-uterine or tubal pregnancy presents quite a serious problem to the physician when the patient is many miles away from a hospital. The question is whether during the acute symptoms one should transport the patient many miles to the hospital or whether one should treat the patient for shock and wait for the acute symptoms to subside in the hope that the hemorrhage will cease. There is, of course, the chance that the ovum may be completely discharged from the tube in which case the hemorrhage will cease, or the rupture may occur into the broad ligament in which case the need for laparotomy is not immediately imperative. The individual case should be treated as the circumstances merit, but as a rule, it has been my experience that as much or more harm may be done in the effort to transport a bleeding woman many miles to a hospital as will be done by putting the patient at absolute rest and waiting a few hours in the hope that she will survive the acute symptoms when she may be moved with comparative safety. Occasionally it may be safer to bring the surgeon and the operating room to the patient rather than to transport her to the hospital.

The hemorrhages occurring during late pregnancy are due to placenta previa or to premature separation of the normally situated placenta. They may also occur during labor. Painless hemorrhage without obvious cause occurring in the later months of pregnancy should be regarded as due to placenta previa and the patient should be put in the hospital when if the child is viable Caesarean section should be performed, unless one is reasonably certain that the previa is of the marginal type. I do not favor temporizing with this complication of pregnancy except when one is delaying in the hope that the child may reach viability or in the marginal type when successful delivery by the natural route may be anticipated.

But what is the physician to do when he is confronted by a patient in labor bleeding from placenta previa. One of several procedures may be

instituted depending upon the condition of the cervix and the type of the previa. If the cervix is not well dilated it may be tightly packed with gauze with or without rupture of the membranes or the bag may be inserted with or without rupture of the membranes. One then pursues a policy of watchful waiting for the cervix to dilate. If the bag is not available good results may be obtained in the marginal or lateral variety by simple rupture of the membranes and the stimulation of the uterine contractions allowing the presenting part to come down and control the hemorrhage. When dealing with complete placenta previa and the incompletely dilated cervix it is necessary to perforate the placenta and place the dilating bag above it and wait for dilatation. When the physician finds that the cervix is dilated the bag should be removed when the presenting part will usually control the hemorrhage in the marginal or lateral variety and labor may be permitted to follow its natural course. When however one is dealing with a complete previa and the cervix is found dilated or easily dilatable best results will usually be obtained by the employment of Braxton Hicks version thus using the breech of the child to control further bleeding. If the bleeding is controlled the expulsion of the child may be left to the natural forces, but if the bleeding continues traction may be made and delivery gradually accomplished. Particular care should be used in the management of the third stage of labor in these cases and unless the bleeding soon ceases upon the expulsion of the placenta one should search for cervical lacerations and if found, immediately repair them. The institution of a firm uterine pack may be necessary in some cases.

The premature separation of the normally situated placenta constitutes one of the gravest complications of pregnancy and labor. Its occurrence is usually followed by the inauguration of uterine contractions. When the separation is at the lower margin of the placenta the hemorrhage usually finds its way between the membranes and the uterine wall and appears externally. Prompt rupture of the membranes and stimulation of the forces of labor will usually admit of a successful conclusion in these cases. When, however, the separation begins in the central or upper portion of the placenta the hemorrhage does not readily find its way externally, but accumulates between the placenta and the uterine wall thus increasing the separation and is spoken of as concealed hemorrhage. The management of this complication of labor outside the hospital presents a most serious problem. Unless the cervix is dilated when the patient is first seen, and it usually is not, immediate attempt at delivery should be avoided. Accouchement forcé or rapid dilatation of the cervix has no place in the management of these cases and is to be condemned. The uterus will be found hard and firmly contracted, the cervix not dilated and the patient in constant pain. My best results have been obtained by the use of full doses of morphine and waiting for dilatation of the cervix after which the membranes are ruptured and labor promptly completed in the most

favorable manner. After delivery the prompt exhibition of oxytoxics, and frequently the uterine pack, are necessary. In many of these patients the uterine musculature is so disassociated by hemorrhage that effective contraction post-partum is impossible and the patient's life can only be saved by the prompt supra-vaginal amputation of the uterus. Couvelaire has designated this condition as uteroplacental apoplexy and it is apparently associated with a toxemic process.

Hemorrhage during labor or soon after the delivery of the child may be due to lacerations of the cervix and perineum or to failure of proper contractions of the uterus after delivery of the placenta. When after the expulsion of the child there is alarming or unusual bleeding and the contraction of the uterus is such that bleeding from that source is unlikely one should immediately search for lacerations and, if found, repair them, which will control the hemorrhage. Perineal lacerations are rarely ever extensive enough to produce more than transient bleeding and it is to the cervix we look for the source of the trouble. As a rule cervical tears may be promptly repaired, but occasionally a case is encountered in which the tear has extended beyond the vaginal attachment to the cervix into the lower uterine segment. This accident presents a most difficult problem and the placenta should be immediately delivered and a firm intra-uterine and vaginal pack applied. This may be removed in 24 to 48 hours and another pack inserted and 24 hours later the procedure repeated, if necessary. Later examination in many of these patients will reveal that the laceration was of such extent that future pregnancy is unsafe and in these sterilization or hysterectomy should be performed.

Retained placenta occasionally gives rise to an alarming hemorrhage. This complication may usually be met by a period of watchful waiting after which it is frequently possible to express the placenta in the usual manner. When, however, profuse bleeding does occur one should unhesitatingly invade the cavity of the uterus and with the gloved hand remove the placenta and membranes. This is a procedure we all hesitate to perform, but under strict aseptic technique it is probably not as dangerous an undertaking as we were formerly taught. It has been my misfortune to have to manually remove the placenta on a number of occasions and I have not yet encountered a case of infection from it. In performing this operation one should never lose sight of its dangers and the necessity for a rigidly aseptic technique.

The treatment of post-partum hemorrhage due to atony or faulty contraction of the uterus is too well known to require much discussion here. Massage of the uterus through the abdominal wall and the injection of posterior pituitary and ergot preparation will almost always prevent hemorrhage after the uterus is emptied. In an occasional case the bleeding may be of such degree that the physician feels warranted in applying an intra-uterine pack. However, my feeling is that in the home of the average

parturient the degree of asepsis is so questionable that the packing of the post-partum uterus carries considerable risk of infection.

The management of excessive hemorrhage outside as well as in the hospital requires the usual necessary attentions to prevent shock and infection. The body whose vitality has been lowered by excessive blood loss presents an inviting field for successful invasion of the body by bacteria. After hemorrhage is controlled one should institute those measures that are necessary to restore blood loss. While not as conveniently done in the home as in the hospital the administration of glucose and saline solutions may be done with little difficulty. When occasion requires blood transfusion may be done in the home with reasonable safety, the citrate being the method of choice.

It is recognized, of course, that the hospital is the ideal place to meet and deal with hemorrhage as well as other obstetrical emergencies. However, the fact is that only a fraction of the deliveries in North Carolina take place in hospitals and the general practitioners and country physicians have to meet these emergencies whenever and wherever they occur. Laboring under the handicaps of no assistance and unsanitary surroundings they bear the primary responsibility of the obstetric emergency and are oftimes unable to get the patient to the hospital before something must be done. Like the story of the fools and the angels they many times must "rush in where the obstetric specialist would fear to tread."

The Chair declared Dr. Brewer's paper open for general discussion.

DISCUSSION

Dr. W. Z. Bradford, Charlotte: Mr. Chairman, being a country practitioner, and no hospital near, I have to do a lot of this work like Dr. Brewer. I think he covered the subject as amply as any one could, because I am sure that he has had lots of this very experience that we all unfortunately have. I would like to ask Dr. Brewer in final discussion to tell us in these cases where we have placenta previa, and partial placenta previa what time and when to interfere and deliver. This has always been a question with me. I just do not know when the patient is quite safe to deliver. This is the most unfortunate part of the work that we have to contend with, and the hardest part.

Dr. O. W. Durham, Greensboro: One thing I have noticed at times that midwives have done. After the delivery of the baby—after you are helpless—with a midwife, or sister or mother-in-law standing around, I put this mother, or whoever is helping me, to massaging. Nine times out of ten if you do not put them to doing something, they stand around and watch you work. If you have to turn aside a minute, when you go back there is a pint or two-thirds of a quart lying there in the bed with that mother. If you will put them to work, you save a pint of blood for that mother. Or, you go back next day and hear her say, "Doctor, I feel fine today, but

Doctor, I just haven't had any rest since you have been away. I have just had so many friends—I have just passed a lot of clots."

And I find it a good policy to tell whomever you leave in charge, if that mother starts to bleed, massage that womb. Massage it two or three times a day.

I remember one time that mother was lying there bleeding to death. Three or four were just pushing their hands—I didn't know what to do. I got there and massaged it a little, and that was all that had to be done. Whoever is helping you, make them massage that womb—just give them a job, and when you have got that baby looked after, you can go and get the after-birth, and then they can look after the baby, after the mother is done.

Dr. John Cotton Tayloe, Washington: In the first place we were taught to pack women, but I understand the newest student does not use a pack. We have an interne in our hospital who says you do not pack women, you stop bleeding with pituitrin. We had one patient out of the hospital, and when she came, we noticed she was packed. I believe pituitrin prevents loss of blood, and does not lower the number of red corpuscles in the blood. I used to try to deliver patients with placenta previa. I have stopped that now, because I believe the ideal treatment in this case is Caesarean. I have brought them into the hospital from as far as twenty or thirty miles—and you get far better results by delivering with Caesarean section than delivering those people in the country.

CLOSING DISCUSSION

Dr. Brewer: Dr. Cheek asked the question about what was the best thing to do in the case of placental bleeding?

The best thing to do is to "pass the buck."

What I try to do, of course, with placenta previa, is to go through the cervix and control the hemorrhage. Of course I do not know how you would handle the thing, outside of getting her to the hospital. Get a bag there and control the hemorrhage that way, until you get dilatation, and get a breech presentation. In regard to post-partum hemorrhage, of course I had all those things in my paper.

THE RELATION OF GYNECOLOGY TO GENERAL MEDICINE

By Paul F. Whitaker, M.D., Kinston, N. C.

Gentlemen of the Section: The subject of my remarks this afternoon was selected by your chairman and my friend and colleague, Dr. Lee. As you will note, the subject is rather broad in its scope and any discussion of it will of necessity be more or less general. While it would be desirable to discuss differential diagnosis of important conditions of mutual interest, the time allotted to this paper does not make this practical and a general discussion is in order. As an internist I would not presume to speak for

general practice in its relationship to gynecology. However internal medicine more nearly than any other specialty approaches general practice which is the real foundation of medicine. My ideal of a good internist or a good general practitioner is one who tries in so far as possible to keep abreast of the ever new and changing developments in the science of medicine. Not to master or attempt to practice the knowledge and skill required in the various specialties of medicine, but to know enough about them to properly advise his patients, and not have to follow blindly and without an opinion of his own the advice and recommendations of a consultant in a special branch of medicine. This is the essence of the relationship of gynecology to medicine or any other specialty for no one can deny that the proper and harmonious collaboration between the general practitioner and the specialist affords more of service and satisfaction to both the patient and the doctor than either alone can offer. The public is aware of this truth, and is rightly demanding consultation and delineation of professional work. The family doctor knows or should know the patient as a whole, his mental, physical and environmental background. The specialist has or should have a more precise knowledge of the diagnostic and therapeutic measure to be employed in the particular condition existing. The summation of the knowledge of both with proper evaluation and free discussion of any differences of opinion before final conclusions are arrived at, give every possible consideration to the patients' welfare; which after all is the prime consideration of all honest men of medicine.

Gynecology in spite of criticism has made much progress in the last twenty-five years. It is now a recognized specialty and with this recognition it has assumed a tremendous responsibility. It has a feature that is not shared with any other specialty, namely that its practice is limted to one sex. The mothers and the future mothers of our children seek his advice and guidance. From puberty through the menopause and beyond he must know their problems. His insight into womankind should surely be something more than that disclosed by inspection of the varying anatomical and pathological appearances met with in the pelvic organs. He should be something more than a surgeon adept in the mechanical handling of surgical conditions of the reproductive apparatus. In a word he should be a physician first with a profound knowledge of the medical and psychological aspect of diseases of women, and a surgeon only when all consideration of the case in question warrants it. No longer will an able gynecologist seek a mechanical cause and mechanical cure in the majority of his patients.

With these general remarks a very brief discussion of a few problems of mutual interest is in order. At present the majority of patients approach the gynecologist through the general practitioner and internist. This is a healthy situation, for if the medical man does his duty by these patients, they are considered as a whole organism and not in the light of the pelvic organs alone. On the other hand as times goes on an increasing number

of these patients will first consult the gynecologist and it will be his responsibility to know that many systemic conditions first manifest themselves through the genital tract. His changing conception will, I confidently believe, enable him to do this and enable him to delineate these patients where they belong.

Disturbances of Menstruation: While the present rage is to consider most of them of endocrine origin it is well to remember that *amenorrhea* is found frequently during the course of acute infectious diseases; that it may be one of the first symptoms of pulmonary tuberculosis, that it may be accompanied by all forms of anemia; and that it may be the result of a cardiac affection, and that it is also observed in chronic intoxications due to alcohol, tobacco, morphine, opium, lead, etc. Suspension of menstruation is sometimes found in young women during the course of the secondary stage of acquired syphilis.

Menorrhagia and Metrorhagia open a wide field for investigation in general medicine. Cardiac affections and especially mitral stenosis often give rise to prolonged menstruation, from general circulatory congestion. Metrorhagia may be due to nephritis, essential hypertension, hemorrhagic purpura, and pernicious anemia. Tertiary syphilis in old women is a frequent cause of uterine bleeding.

Dysmenorrhea is frequently found in nervous and arthritic women with no demonstrable pelvic pathology, and the pain is controlled only by proper hygiene and diet destined to improve the general condition. Stenosis of the cervix and other mechanical factors do not explain them all. Before leaving this subject let it be understood that it is not my purpose to belittle the importance of endocrinology and the various hormones in their relation to disturbed menstruation, but only to call attention to other and extrapelvic factors to be considered in their etiology. Gynecology deserves great credit in calling our attention to the valuable assistance of hormone therapy in many of these conditions.

Leukorrhea: Many is the time that I have been told by a grandmother that her daughter or grandchild has "the whites" but they thought it only a sign of weakness. There is definite truth in this statement, for there may be a leukorrhea when the general system is weakened, when convalescing from some acute disease and during the course of certain chronic conditions. Not all leukorrhea is due to bacterial, parasitic or neoplastic invasion of the genital tract.

Pelvic Pain and Backache: Pain in the pelvis and low backache is a problem requiring careful study and mature judgment before final conclusions are reached. Particularly is this true if a surgical condition is found in the pelvis and operation is being considered. We have had the humiliating experience of promising a cure of backache to a patient with a prolapsed uterus and found later that her pain was due to an arthritic spine. We have seen ovarian cysts removed for the relief of pelvic pain which was later found to be due to ureteral stricture. We have seen young

girls operated on for chronic appendicitis and a normal appendix found. The pain was due to the rupturing of a graffian folicle at the time of ovulation and the patient continued to have the pain at the time of subsequent pre-menstrual periods. The fact that a patient has pain in the pelvis and low backache and a surgical condition of the genital organs is found is no indication for operation until, orthopedic, urological, medical, and gastro-intestinal lesions have been sought for and if found properly evaluated as a possible source of the trouble. Careful evaluation of symptoms, signs, and the results of special examinations will prevent many mistakes in this field. In addition there is the danger that someone's mother, wife or daughter will not survive the operation.

Cervical and Vaginal Lesions: If in the course of a general survey by the medical man a cervical erosion or polyp is discovered, the gynecologist should be called upon to take the responsibility of whether or not a biopsy or diagnostic dilatation and curettement of the uterus is necessary. The same may be said of lesions of the vulva, particularly pruritus. Many of the latter will be found to be due to diabetes, on examination of the urine and blood. Epithelioma should always be borne in mind when considering any case of chronic vulvitis.

The Neurotic or Constitutionally Inadequate Individual: Many of these women have complaints referable to the pelvis and in many of them actual pelvic pathology is found. Beware of operation on these women. The medical man sees many of these patients; some of them proudly, others mournfully recounting their numerous pelvic operations and displaying their several scars. They had the pathology all right but what the operator failed to take into consideration was that it was the patient's temperament and not her disease that was making her ill. I take off my hat to the gynecologist when he says "she has a fibroid or an ovarian cyst, but I don't think an operation will cure her." That man is more than a mere operator. He is a real doctor. The important point here is to be able to recognize their constitutional defects and give it real consideration before advising surgery.

The Menopause: A paper of this kind would not be complete without a few words concerning this period of a woman's life. Here I would like to make a plea for the handling of the psychic difficulties of this period by the general practitioner, mainly for the reason that he knows the patient better as a whole. Any unusual bleeding at this period should be considered cancer until otherwise proven, and it should be the responsibility of the gynecologist to decide this question. His advice also may be well worth while in the field of endocrine therapy. However the psychic treatment is a medical problem and should be treated as such. For many women the menopause is merely and uneventful incident of her life. She has passed through the "age of innocence" into puberty; through the period of sexual life and reproduction, and grows old gracefully at the climacteric, gradu-

ally passing into the period of post menopausal life. Happy is the woman who can express herself as did Browning:

"Grow old along with me,
The best is yet to be
The last of life, for which
The first was made."

However, the great majority of women in civilized countries are subject to marked disturbances in mental and physical equilibrium at this period, and require careful guidance and treatment by the physician. The explanations of these disturbances are multiple; none of them quite satisfactory. Certainly the endocrine and nervous systems are involved, and the mental and physical make-up of the individual probably play a large part. To the laity and to many physicians the climacteric is considered a pathologic state. This idea should be combatted whenever possible for some women through the years develop a subconscious fear toward this period which flares to the surface as they approach it. All too often these fears end in a frank psychosis. The exaggeration of constitutional traits are brought about by the disturbed physiology of the period. I would not burden this audience with the chain of symptoms thoroughly familiar to all of you, but will only say that common sense, the judicious use of sedatives and other drugs when indicated, and above all proper psychotherapy and reassurance by the doctor that knows his patient offers the best means of bringing these women through this trying period of her life.

Lastly I would like to speak briefly of the woman who has definite pathology in the pelvic organs and in whom an operation offers a reasonable chance to relieve the symptoms, but who for reasons of age, some cardiac or renal lesion or some medical condition is not the best of risks. We have all had bitter experiences with this type of case and found that hindsight was better than foresight. Unless the operation is one of necessity it had probably best not be done for even though partially disabled the patient may round out many useful years as a wife or mother. A good question to ask ourselves in this situation would be, what would I do if this were my mother, my wife or my daughter?

The above instances, cases and experiences will serve better than can be expressed in words the necessity of the proper relationship between gynecology and general practice. May this relationship be carefully fostered, forever abiding, and continue to be mutually helpful to both the patient and the doctor.

The remarks that I have addressed to you this afternoon have been somewhat rambling, somewhat disconnected, and the discussion of certain conditions has of necessity been entirely too superficial. However, it is hoped that the related instances, experiences and cases may serve the purpose of emphasizing the necessity of the proper relationship between gynecology and general medicine.

The Chair announced that Dr. Paul Ruffin is not present, therefore discussion of Dr. Whitaker's paper would be led by Dr. Oren Moore of Charlotte.

DISCUSSION BY DR. MOORE

I can do nothing but speak in most favorable appreciation of Dr. Whitaker's paper, particularly the statement as to the normal balance between the relationship of the general practitioner and the obligation to the patient. In North Carolina a high degree of moral responsibility exists. And his statement is evaluated as to whether or not an operation would be homicide; as to what one would do under the difficulties when determined, by which one might discover whether he was giving right and proper advice; and yet that would be a standard of moral responsibility, and probably not the right one entirely by which we should proceed. We all know our emotions are involved with those who are near and dear to us, and we are prejudiced; but, with those with whom we are not on intimate terms, only appearing as a medical adviser, we might hesitate to employ one of that standard as one not always to be accepted. The old statement years ago, that "The best way to avoid appendicitis is where you are in the doctor's family," is true, for we frequently have fears of operative proceedings on those we most care for.

The doctor's statement about endocrines and endocrinology, and what might be expected from it, and the discouragement of mechanical procedures, from purely a gynecological viewpoint, is certainly well put and well taken. We are no way certain of the benefit of mechanical treatment of all diseases of women. Twenty-five years ago there was no other treatment except that which was represented by the mechanical methods. And with the advent of surgery, operations for dysmenorrheas, etc., there was widespread belief that we had to relieve all pelvic inflammatory matter. We know that is not true now, and the gynecologist who has kept up with the times is finding himself doing less and less surgery each year. I think the more one becomes experienced the more dubious one is about opening the abdomen for surgical proceedings.

THE CONSIDERATION OF PHYSIOLOGY AND PATHOLOGY IN GYNECOLOGY*

An Analysis of 2933 Surgical Specimens*

By C. C. Carpenter, M.D., Wake Forest, N. C.

Abdominal surgery began with the gynecologists. Following this beginning, the specialty of gynecology became more intimately a part of general surgery. More recently, the specialty has again begun to claim a place of its own. This place is becoming emphasized more and more because of the realization that gynecology is not primarily a matter of operations and opera-

*Read before the section on Gynecology and Obstetrics, North Carolina State Medical Society, Asheville, N. C., May 6, 1936.

*From the Department of Pathology, Wake Forest College Medical School.

tive technique, but a study of the patient as a whole with the separation of physiology and pathology and an intimate knowledge of their meeting point. This newer knowledge of physiology as it relates to the normal and abnormal function in women has developed a keen sense of appreciation of endocrinology. While we recognize the rapid strides that have been made in our knowledge of functional abnormalities as exhibited by the endocrines, in all probability the study is in its infancy. Therefore, the gynecologists have developed a just claim to their specialty and the pathologist and general surgeon must again qualify if our claim to a part in this work is to be justified.

As a basis for this discussion, I have reviewed 2933 unselected surgical specimens received in our laboratory during 1935. This study is based on our diagnoses of ovaries, Fallopian tubes, uteri, cervices and uterine curettings received from eleven general hospitals and physicians doing office practice.

The age of the patient was given in 414 of the gynecological cases. The youngest patient was 13 years and the oldest 66 years of age, giving an average age of 35.9 years (Chart I).

AGE

Age, given	414 cases
Youngest	13 years
Oldest	66 years
Average age	35.9 years
10-20 years of age	33
20-30 years of age	150
30-40 years of age	86
50-60 years of age	23
60-70 years of age	6

Chart I

The period from 20 to 30 years showed the highest number of operations, or 150 cases. The period from 30 to 40 years was second with a total of 86 cases. During the period from 13 years to 40 years of ages 269 or 90 per cent of the operations were done. It will be observed that this is the period of sexual activity and this fact alone shows that physiology and pathology in this type of case must be intimately associated. It is unfortunate that a pathology laboratory is unable to have the advantage of the age of the patient and menstrual history in such a large proportion of cases. This knowledge would be of immense value to the pathologist in diagnosis, especially as it concerns functional rather than histologic abnormalities.

Obviously, time will not permit a discussion of all of these diagnoses. Principally what may be termed the dividing place between physiology and pathology will be considered.

The importance of gynecology may be further emphasized by observing that in this material a total of 1137 or 38.4 per cent of the specimens removed came from the female pelvis (Chart II).

2933 SURGICAL SPECIMENS EXAMINED

	Total	*Per Cent*
Ovaries	322	10.9
Fallopian Tubes	231	7.8
Uteri	218	7.4
Cervices	193	6.5
Curettings, uterus	173	5.8
Total	1137	38.4

Chart II

Of these hospitals there is on the staff of one of them two gynecologists and three other hospitals claim one each. This fact shows the important position held by the general surgeon in gynecological practice. Although no tabulation was made on this point, it was observed that, in many instances, a higher percentage of specimens from the female pelvis were received from the hospitals that do not have a gynecologist on the staff.

Ovaries: An analysis of the 1137 gynecological specimens shows a larger number of oophorectomies or partial removal, with a total of 322 or 28.3 per cent. (Chart III).

1137 GYNECOLOGICAL SPECIMENS EXAMINED

	Total	*Per Cent*
Ovaries	322	28.3
Fallopian tubes	231	20.3
Uteri	218	19.1
Cervices	193	16.9
Curettings, uterus	173	15.2

Chart III

A review of our diagnoses of the ovaries submitted shows leading by a large majority what may be called involutional states. The only diagnosis made by us in a total of 179 or 55.5 per cent was one of the numerous terms used for follicular cysts (Chart IV).

OVARIES

Follicular cyst	179
Simple cyst	36
Corpus luteum cyst	33
Chronic oophoritis	32
Hemorrhagic cyst	16
Pseudomucinous cystadenoma	6
Serous cystadenoma	3
Cystic adenocarcinoma	2
Krukenburg Tumor	2
Fibroma	2
Dermoid cyst	2
Granulosa cell carcinoma	1

Chart IV

I feel that we should approach the consideration of these diagnoses with a big question mark as to whether they are physiological or patho-

logical. By pathology, meaning a lesion, the removal of which leaves the patient in an improved state of health. This question was raised by the writer about a year ago.[1] Obviously it cannot be answered by the pathologist. A careful study of the patient over a period of years by the surgeon is the only approach. But the pathologist must assume his share of the responsibility. We too often give our diagnoses in some half understandable term and the surgeon accepts it in a manner that will most readily justify the operation. Hertzler[2] said, "Within a week I read an account by a noted pathologist in which an ovary was described as "polycystic" and showed "perioophoritis." Such words as these quite naturally appease the conscience of the operator for doing a worse than useless operation." From the standpoint of physiology and pathology we may well consider the first three most frequent diagnoses in this series as essentially normal states. By combining the diagnoses of follicular cyst, simple cyst and corpus luteum cyst, we find a total of 248 or 78.9 per cent of specimens of ovary in this classification. The fourth most frequent diagnosis is sometimes included, but our diagnosis of this condition was considered a definite inflammatory condition, usually associated with a salpingitis.

The primary function of the ovary is to produce and liberate ova and supply the body with the hormones estrin and progestin. In the ovaries of the newborn infant it has been estimated that both ovaries contain about 400,000 primordial follicles. At puberty there are from 15,000 to 30,000.[3] Since one ovum is discharged from each ovary during each menstrual cycle from puberty until the menopause, it is impossible for all of the follicles to fully develop. As the follicle develops and the follicular liquid increases, the period of rupture is reached and the ovum discharged. After the ovum is discharged, the epithelial cells and cells of the theca interna change rapidly into large pale-staining cells and the corpus luteum is formed. If the average woman begins at puberty with about 15,000 follicles in each ovary and lives a life of normal ovarian activity of about thirty years, she will have developed about 360 ova. Therefore, approximately 14,640 follicles will not reach full development.

The usual sequence of events is the death of the ovum and collapse of the follicle, resulting in a connective tissue scar. For some unknown reason, a good many of the unruptured follicles fail to undergo atresia. The ovum dies and the follicular liquid increases, resulting in a follicular cyst. The older explanation was that there was a chronic inflammatory condition, resulting in a thickening of the tunica albuginea. That under normal conditions locally, these follicles would have ruptured. This explanation was probably due to the fact that there are cells in the stroma that are associated with the usual chronic inflammatory condition. This finding along with the presence of the cyst also serves to explain the many

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[1]Carpenter, C. C. Surgery and the Non-Proliferative Ovarian Cyst. Southern Medicine and Surgery, 97: 85-86.

[2]Hertzler, Arthur E. Surgical Pathology of the Female Generative Organs. J. B. Lippincott Co., 1931.

[3]Maximow and Bloom. A Textbook of Histology. W. B. Saunders Co., 1934.

synonyms of chronic oophoritis, hydrops follicularis, polycystic and fibro-sclerotic ovaries. In our diagnoses, this small pea-sized cyst located around the periphery of the ovary was designated follicular cyst or hydrops follicularis. We used the term simple cyst for the larger, usually single non-proliferative cyst that varies from the size of the end of a man's thumb to that of a walnut. These may be a larger development of the same process. The diagnosis of corpus luteum simply means the follicle after ovulation.

Since the development of the knowledge of the importance of the hormones estrin and progestin in physiology, the surgeon must consider in every detail the symptoms for which he would remove an ovary of this type. More important, he must study the patient as a whole, before focusing attention seriously on the local complaint.

Fallopian Tubes: We find Fallopian tubes, with a total of 231 or 7.8 per cent, constitute the second largest number of specimens received that came from the female pelvis. As would be expected, acute salpingitis was the most frequent diagnosis. Many infections travel either by the lymphatics or uterus to this location (Chart V).

FALLOPIAN TUBES

Acute salpingitis	180
Chronic salpingitis	147
Tubal pregnancy	8
Tuberculosis	1

Chart V

Aside from transmitting the ovum, the fallopian tube plays a minor part in physiology. It has been shown to undergo changes in the epithelium with the menstrual cycle.[4] In all probability, the diagnosis of chronic salpingitis, both clinically and pathologically, is sometimes an intrusion of this physiological change.

Uterus: The uterus was examined third in frequency, with a total of 218 or 7.4 per cent of the total number of specimens. An analysis of these diagnoses show that leiomyomata (fibroids) were found in 77 specimens. (Chart VI).

UTERUS

Leiomyomata (fibroid)	77
Leiomyomata and endometrial hyperplasia	21
Fibrosis of uterus	20
Hyperplasia of endometrium	65
Placental tissue	7
Carcinoma of body	4
Sarcoma	2

Chart VI

Leiomyoma with endometrial hyperplasia was diagnosed 21 times but this is not a true representation of the prevalence of hyperplasia associated

[4]Novak and Everett. Cyclical and other Variations in the Tubal Epithelium. American Journal of Obstetrics and Gynecology, 16:499, 1928.

with leiomyoma as in a good many instances the tumor nodule alone was received.

In this group of diagnoses the uteri showing only hyperplasia of the endometrium was diagnosed second in frequency, the total of 65 times, and is a condition which should claim our major attention. Endometrial hyperplasia may be considered as a condition in which the endometrium is thicker than is normally found. A division between physiology and pathology was not attempted. The thickness of the endometrium varied from that seen in the ordinary menstrual cycle to what may be termed polypoid hyperplasia. The character of the glands also varied from the long, straight type of the resting stage to the large dilated glands of the Swiss cheese pattern. If we accept the production of the thickened endometrium as being due to an excess estrin or deficiency in progestin, we would be forced to agree that removal of the uterus is only treating the symptom. The symptom is usually some disorder of menstruation. A few of these uteri, in which the cervix was also removed, showed in addition to the hyperplasia, chronic endocervicitis. But even if a diagnosis of endometrial hyperplasia and chronic endocervicitis is made, one may question whether this type of treatment is justified. Occasionally a hysterectomy appears advisable in these cases in order to prevent a severe anemia from the loss of blood. These cases must be the exception and in all probability resorting to surgery, instead of correcting the marked disturbance in general bodily physiology, will leave the patient in a less improved state.

Uterine fibrosis was diagnosed 20 times. Theoretically, this condition may follow an acute metritis but in the great majority of the cases it is, no doubt, associated with changes that come about with the cessation of ovarian function. The most frequent symptom here is also uterine bleeding, at or near the menopause. Hysterectomy in these cases may be more readily justified since the uterus is at its functional end. Also endocrine disturbances may be more difficult to correct.

Cervix: Chronic endocervicitis is a very prevalent condition and was diagnosed in this series a total of 240 times (Chart VII).

CERVICES

Chronic endocervicitis	126
Chronic cystic endocervicitis	114
Carcinoma, squamous cell	14
Fibroma	1
Sarcoma	1
Adenocarcinoma	2

Chart VII

This represents many types of erosion, laceration and cyst formation. These conditions may be of the so-called physiological type or due to trauma with secondary infection, the most common of which is associated with child-birth. After establishing a diagnosis of chronic endocervicitis, either clinically or by biopsy, the condition should be corrected in the

way most advisable. Since infection is harbored in the glands, any procedure that does not promote free drainage or remove the glands, will probably not correct the condition. This is made doubly important because it has been shown[5] that from 96 to 97 per cent of carcinomata develop in those with a previously existing chronic endocervicitis.

Uterine Curettings: Endometrium alone was examined in a total of 173 or 5.8 per cent of the cases. These diagnoses showed various degrees of hyperplasia in 100 cases. (Chart VIII).

ENDOMETRIAL CURETTINGS

Hyperplasia	100
Placental tissue	56
Acute endometritis	10
Adenocarcinoma	2
Chorio-epithelioma	1
Tuberculosis	1

Chart VIII

For this discussion no attempt was made to differentiate the different types and as in the case of the uterus, all variations of endometrial change as represented by the menstrual cycle were observed. A majority of these curettings were removed for diagnostic purposes. This is a most important procedure and should be encouraged. To proceed blindly to a more radical procedure can hardly be justified except under very unusual circumstances. It has been observed in our laboratory that in recent months this form of biopsy is being more frequently used, which, in my opinion, is an indication that the general surgeon and gynecologist are making a more thorough study of physiological and pathological changes in women than was formerly the practice.

Although it does not appear on the record, in noticing the number of uteri received, we had a good many in the age group from 20 to 30; a good many hysterectomies were done in the age group from 20 to 35.

DISCUSSION

Dr. R. W. Ruark, Raleigh: Today we have had for our consideration two papers, offering pleas for conservatism in the treatment of pelvic abnormalities in the female.

Dr. Carter has shown us (in the General Session this morning) what excellent results can be obtained in the cases of pelvic inflammation by bed rest and patience, 97.2% progressing to a clinical cure without the aid of the knife.

In his amazing figures presented this afternoon, Dr. Carpenter shows just how little consideration is being given the conservative treatment in a representative group of hospitals. Get this: Dr. Carpenter estimates that some form of ovarian operation was performed in 78.9% of cases of

[5]Carpenter, C. C. The Unrepaired Cervix as a Cause of Malignancy. Southern Medcine and Surgery, 96: 125-126.

which normal, or temporary abnormal conditions were found on pathological examinations. *Again,* 65 uteri were removed for no other reason than hyperplasia of the endometrium; and 7 uteri were removed containing placental tissue. Over one-half of the specimens of fallopian tubes sent to Dr. Carpenter were removed during the acute stage of inflammation, apparently without any attempt at prolonged conservative treatment.

Lumping all these cases together, we see that 60% of these operations were performed on women from 13 to 30.

Taken together these papers present an unanswerable argument for conservatism in the treatment of certain pelvic conditions. It seems almost fantastic to find that such argument is needed in this advanced year of 1936.

It is impossible to add to these excellent papers. The figures speak for themselves. They cry loudly for conservatism and adequate physiological studies before attempting any surgical procedure.

Dr. R. A. Ross: Dr. Carpenter's paper is the most illuminating discussion here. It seems to me that several things stand out: the number of ovaries taken out—it is preposterous that so many ovaries should be taken out. If there was a uterine scrape, I failed to see that. If every woman, whose ovaries were taken out lived next door to us, there would be fewer ovaries taken out. The treatment of symptoms of therapy leads only to one thing. By no legend can anybody say that surgery and treatment for hyperplasia can be embrased. The idea that you had to judge ovaries by the number of cases we see operated on is preposterous. It is a species of operation that leads to surgical junk.

I want to congratulate Dr. Carpenter for his paper. I wish both papers could be taken up before the General Session.

Dr. Carpenter: I appreciate the discussion of this paper, and I want to repeat that I am not presenting these figures because I have any idea that I should attempt to answer the questions that have been presented, because obviously I am not qualified; but I do believe it is a question that this group could answer.

I want to say also, in analyses of these specimens with their pathological openings, they represent a single operation. For instance, the uterus, if it be removed, the fallopian tubes, the ovaries all included. I separated those, but this shows the prevalence of one operation only. In regard to the follicular tubes, I might say that the diagnosis of acute salpingitis does not always indicate a permanently acute salpingitis, because the acute attack may possibly have subsided, but the chronic inflammatory condition in the tube is left. As to whether that would be an operative condition I do not attempt to say, but I just wanted to offer that explanation, and I am glad of the opportunity to have met with this group.

WHAT ARE WE GOING TO DO ABOUT ABORTIONS?

By Brodie C. Nalle, M.A., M.D., F.A.C.S., Charlotte, N. C.

Induction of abortion has been performed since remotest times among both savage and civilized races for both therapeutic and criminal reasons. The operation very probably was originated soon after the exit of the human race from the Garden of Eden, and will most probably be continued till Judgment Day.

Some of the ancient races induced abortion simply as a means of preventing over-population; others performed it solely to avoid the discomforts and dangers of childbirth; while decadent Rome permitted and advocated abortion for the preservation of the beauty of her women.

With the advent of Christian principles, however, some restraining influence was brought upon the practice, and later the law made criminal abortions a punishable offense. The ancient Jews thought criminal abortion a grave sin, but recognized therapeutic abortions in the cure of diseases affecting the mother.

Christianity, legislation, and our code of ethics have exerted their efforts to control the improper induction of abortions, but the number of such abortions has rapidly increased. These influences have at least kept criminal abortions from being publicly performed except in Russia where abortion has been made legal and Christianity has become the criminal offense. With such a reversal of moral sense and practices and the resultant ill effects of abortions, we can only wonder what the final results will be upon the stamina of Russian women and upon the race.

Without citation of statistics the number of abortions occurring spontaneously and being induced is astounding and the deaths and terrible sequellae are numerous, but no adequate means seem available to check the number.

Certainly the prevalence of criminal abortions is a very sad commentary upon the present era. With the failure of all other efforts, it seems that a well advised and effective means of contraception given to the public would be preferable and would prove our best means of reducing the present number of criminal abortions and thereby their sequellae.

Therapeutic abortion is, of course, permissible and necessary, but with the great improvement in our present day knowledge and therapy we can reduce the number of therapeutic abortions. At the same time I believe our maternal mortality is at times increased because more therapeutic abortions are not induced at the right time and in the right cases.

Induction of abortion is permissible and indicated when definite medical reasons threaten the life, or seriously endanger the health of the mother. This decision being made after a most careful and intelligent examination of the patient and after consultation with one or more capable and reputable physicians with their written, signed, and recorded reasons and

recommendations for induction of abortion. *Even when indicated and performed by a capable physician and under the best conditions, induction of abortion is not without danger and is more dangerous and complicated as the pregnancy advances.* For this reason, when induction is indicated, it should be performed at the earliest advisable date. Such complications as perforation of the uterus; tears of the cervix; hemorrhage; and infections with their sequellae are numerous even under the *best conditions* and *in the best hands.*

It is generally agreed that *after* indicated abortions, even when done under the best conditions, that many women become sterile; and that later many become habitual aborters; and others have premature births and other abnormalities.

It has also been estimated that about half of the cases having had abortions suffer with distorted menstruation; many show menorrhagia, amenorrhea, and dysmenorrhea; and in later pregnancies and deliveries they have more complications such as inertia of the uterus during labor; post-partum hemorrhage; and infections.

Considering the many dangers and complications of abortions the question arises whether it would not be better to prevent pregnancy in many cases rather than have them terminated later with the consequent morbidity and mortality.

In considering the specific indications for abortion we must realize that our decisions should often depend upon the social and economic condition of the patient—whether the case in question can afford and procure the benefits of careful prenatal care; whether she can have the services of an efficient physician; and whether institutional treatment, if necessary, would be available. Upon these advantages or disadvantages depends a great deal what our decision should be in individual cases.

Certain diseases of the heart are real indications for abortion. These cases should be decided upon by the insufficiency of the heart muscles rather than the presence of valvular disease. Cases showing myocardial failure, which do not respond to rest and treatment, especially if occurring early in pregnancy, should be aborted. Cases of mitral stenosis are usually rather bad risks, and those with both mitral stenosis and regurgitation are especially bad risks. Heart diseases of moderate severity do not require abortion provided the patient can have the necessary medical attention and relief of arduous physical duties. The actual number of cardiac deaths in pregnancy and delivery is not large, nevertheless this small number might and should be avoided.

There always will be a difference of opinion as to the necessity of abortion in tuberculous cases. Here again the status of the patient and the care and skill available to the patient is of great significance in the decision. A patient with the advantages of institutional treatment, with required rest and food and so forth might not require abortion, whereas the same patient without such advantages should be aborted. Abortion in

tuberculous cases should be induced *early* if it is *contemplated,* for abortion done late in pregnancy seems about as injurious as the continuance to term and delivery. Concensus of opinion is that any active case of tuberculosis should certainly have a therapeutic abortion done as early as possible, and that all cases of laryngeal tuberculosis should be aborted, and so-called cured cases should have remained cured for two years before becoming pregnant.

Cases of severe chronic renal diseases and hypertension usually have exacerbations as pregnancy advances with further permanent damage to the mother's kidneys and frequent fatal results and should, therefore, be aborted.

Cases of pyelitis and pyelonephritis starting early in pregnancy unless yielding quickly to treatment, should be aborted else the results will be spontaneous abortion or premature birth of a dead child, and danger of death to the mother.

Fortunately diabetic patients are not very fertile, so cases of pregnancy in frank diabetes are very rare. This infrequency is due to the hypo-ovarian function which is present in diabetes. Since the introduction of insulin diabetic fertility has been increased. Before the discovery and use of insulin most cases, unless aborted, resulted fatally, but with the use of insulin, advantages of blood sugar examinations, proper diet and care these cases can, with reasonable assurance, be carried through to safe delivery. Unless the case can have this care they should be aborted. Even with the best care pregnancy in diabetics may terminate in abortion or premature dead baby, and often results in deformed or oversize children necessitating Caesarean section.

The incidence of pregnancy in hyperthyroidism is low, but it is dangerous. Spontaneous abortion and premature labor often occur in this disease. Simple goitre or persistent adolescent goitre are not dangerous in pregnancy, and usually do not require abortion. Mild forms of toxic goitre may be treated conservatively and pregnancy carried to term. In case of the need of surgical intervention thyroidectomy should be performed before abortion, for following thyroidectomy the pregnancy frequently goes safely to term.

Leukemias and anemias are not favorable to conception, but should such cases occur they occasionally are of such severity as to justify abortion. In these cases especially our improved knowledge and therapy comes to our rescue and makes fewer cases necessary for therapeutic abortion.

True toxemic vomiting of pregnancy, if it does not respond to the administration of our improved therapy should be aborted before great loss of weight, and the appearance of fever and jaundice. And especially in cases of pernicious vomiting showing lesions of the optic nerve and retina, abortion should be induced.

In cases of insanity there again is great diversity of opinion. Person-

ally, I am convinced that in any form of insanity abortion is justified and should be done as early as possible.

Cases of frequent bleeding occurring early in pregnancy which usually terminate later in spontaneous abortion or in placenta previa should be aborted early.

Cases with gross pelvic contractions and deformities, if they are unwilling to undergo Caesarean section should be allowed the privilege of early therapeutic abortion.

The very frequent occurrence of spontaneous abortions, which also carries a heavy toll of dangerous and harmful sequellae, should attract our special attention. I feel that particularly in this class of abortions we can do a great deal in the way of prevention. The causes are numerous and interesting and many of the causes are preventable or curable, so it seems reasonable that we can, *with intelligent prenatal care and treatment, prevent a great many cases of spontaneous abortions and thereby prevent many harmful sequellae.* Of the causes which might be mentioned are syphilis; disturbed carbohydrate metabolism; thyroid deficiency and hyperthyroidism; disturbed endocrine balance; anemias; calcium deficiency; previously induced abortions; cervicitis; retro-displacements; fibroids; and last, but not least of the causes, are long automobile rides. The automobile industry, without intent or knowledge of the fact, probably rivals Russia's legalized efforts in productions of abortions. In my own experience long automobile rides lead in all causes of spontaneous abortions.

It is a most interesting fact to me that nature should show a lessened fertility as well as a tendency to spontaneous abortions and abnormalities in so many diseases in which we consider therapeutic abortions indicated—namely, syphilis; diabetes; hyperthyroidism; tuberculosis; anemias; and leukemias, that nature so asserts herself certainly indicates that, unless these causes can be alleviated or removed, therapeutic abortion is permissible and advisable.

Nature gives us another lesson in the fact that the mortality and morbidity rate is highest in criminal abortions, the majority of which are improperly performed. Next highest in therapeutic abortions, even though done in the most approved manner; and least in spontaneous abortions—which fact I feel should be the *best argument in favor of conservation in the production and handling of abortions.*

Therapeutic abortions may conservatively be produced by—1. Drugs, such as ergot, pituitrin, quinine, castor oil, and estrin. 2. Should this method fail, dilatation of the cervix with cervical and vaginal packs, and with the additional administration of drugs if necessary. 3. By dilatation and curettement, provided the pregnancy has not progressed past eight or ten weeks. If past ten weeks emptying of the uterus mechanically *assumes dangerous proportions,* and the danger increases with the advance

in pregnancy, so after ten weeks, abortion should be induced conservatively—leaving to nature the separation and expulsion.

In complete therapeutic spontaneous and criminal abortions the best rule is hands off, with watchful waiting, except in cases of prolonged or excessive bleeding in which cases either digital or ring forceps removal of loose or protruding tissues and uterine packing should be the method of treatment.

Conservative treatment should be *followed in all febrile cases,* for who can tell whether sapremic or septic conditions are present in the uterus. Rest in bed, with elevation of the head of the bed; supporting treatment; intravenous medication, and blood transfusions; no douches; no vaginal examinations; stay out of the uterine cavity except for removal of loose tissue and packing in case of hemorrhage.

Statistics are in favor of conservative methods of treating of all varieties of abortions.

SUMMARY

1. A well advised and effective means of contraception given to the public is about our only hope of reducing the number of criminal abortions; and a most conservative treatment of these cases after induction is our best chance of reducing the mortality and morbidity rate.

2. The number of spontaneous abortions can be reduced by the early detection, and careful prenatal treatment of the various known causative diseases.

3. Therapeutic abortions, if indicated, should be done as early and as conservatively as possible; and contraception rather than therapeutic abortions is preferable in cases suffering from diseases in which pregnancy is definitely contraindicated.

4. That by conservatism in the induction and after treatment of all classes of abortions, and especially in febrile cases, we can reduce our mortality and morbidity.

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3. Practical Medical Series—1934-1935.

DISCUSSION

Dr. Oren Moore, Charlotte: Mr. President, I have never been able to tabulate an iron-clad set of indications for therapeutic abortion. Perhaps it is the real province of this Section to codify or classify indications for therapeutic interruption of pregnancy. In doing this it would be well to take into consultation the internists. In fact, I personally rely, to a very great extent, in the so-called borderline cases, on the opinion of the medical man.

Taussig's last work is off the press only a few months, and in it he states that he has collected some 37 different indications for abortion, as reported in American clinics. Of course, this does not mean that there were actually 37 different reasons why pregnancy could not be allowed to continue, but it does mean that there is a wide range of view as to what constitutes a reason for abortion.

It is entirely probable that we can properly enlarge the recognized and approved indications which will stand up in a medical legal sense.

From the Moscow Abortion Clinic, for the year 1934, 63,000 abortions were reported, which is the first time—so far as I know—that any such mass murder was ever scientifically recognized. Their indications were legion, and included such feeble reasons as "the desire for economic and social freedom."

It is reasonable to assume that we can restate our ideas along this line, because of the increasingly complicated lives which we are compelled to lead, and which complications undoubtedly affect the child-bearing function.

There are, of course, literally thousands of abortions of criminal type being done which do not come to the records, and in periods of depression, such as that through which we have just passed, the abortion rate is bound to rise as compared to the normal birth rate, and while it has been argued that widespread contraceptive information will reduce the abortion rate, this is certainly a debatable statement, as it would seem that most young people of today are as well informed on contraceptive procedures as is the physician. For that matter, we are not so well informed ourselves, as most of our experiences will prove.

When we try to classify the constitutional diseases as causes for therapeutic interruption, probably pulmonary tuberculosis takes first place in the list. At least to my mind, active tuberculosis and pregnancy are not compatible conditions, and I have no hesitancy whatever in interrupting if there are any signs of activity in the chest.

The matter of vomiting in pregnancy is one that continually presents itself as an indication and I confess that it has troubled me enormously. I am convinced that much of the vomiting of pregnancy is of neurotic origin. This being true, it is hard for me to determine where to draw the line beyond which I will not permit vomiting to go, and it is certainly a fact that this cause for interruption is growing more and more infrequent.

As to the method of treatment of abortion, I still feel that removal of the products of conception, with a dull ucrette or forceps, at a very early date, is the most satisfactory procedure. If I were practicing in an isolated location, without benefits of hospitals or anesthetics, etc., I might view the situation differently.

Dr. Nalle (closing the discussion): I thank Dr. Moore for his dis-

cussion of my paper. I asked him to discuss it because I know that he disagrees with my ideas on the subject.

Dr. Moore referred to contraceptive methods obtained from filling stations, and what I suggested was a well advised, intelligent and effective method and not his filling station method. I acknowledge the uselessness of the filling station method.

He is an advocate of the radical production and treatment of abortions in spite of the fact that many of the clinics have published their results showing their mortality and morbidity about 50% less than under radical methods. He says he can't empty the uterus completely with the finger—neither can I. My suggestion was to remove the masses protruding from the cervix with the finger or forceps.

Some fifteen years ago Dr. Moore criticized severely the suggestion that a great deal of vomiting in pregnancy was neurotic in origin. Now he is a strong advocate of the idea. Possibly later he will become a conservative also in the handling of abortions.

I still believe we can improve on the terrible toll which we are paying in the matter of abortions; and that properly advised contraceptives and a more careful treatment of the causes of spontaneous abortions with a conservative and standardized method of handling abortions will reduce our mortality and morbidity.

A REVIEW OF FIVE HUNDRED CASES OF FEMALE STERILITY FROM A FUNCTIONAL-ENDOCRINAL AND ORGANIC VIEWPOINT

By Robert Thrift Ferguson, M.A., M.D., F.A.C.S., Charlotte, N. C.

I shall discuss this subject as briefly as possible, eliminating all unessentials. The question of sterility has always been important and seems to be growing in this respect.

The former methods of treating sterility by dilating the cervix, curetting the uterus, and by various cutting operations about the cervix, without first determining the patency of the fallopian tubes, have been definitely discarded. One must *know* whether the tubes are patent before any treatment can be outlined. In order to study a case of sterility the making of a complete history and physical examination is indispensable.

To present the subject in a concise manner I shall speak to you from two slides that I will have thrown on the screen giving in detail the examination as carried out in my office.

1934 SERIES

Average age	28	Syphilis	1
Average menstrual age	13	Fistula in ano	0
Average number years married	7	Fissure in ano	7
Previous operations	38	Gonorrhea (proved)	4
D. & C.	29	Heart lesions	7
Headaches	61	T. B.	2
Backaches	65	Fibroids	11
Leukorrhea	34	Constipation	62
Tonsils removed	60	One or more pregnancies	30
Painful coitus	21	Malposition of uterus	47
Dysmenorrhea	62	Miscarriages	20
Hemorrhoids	1	Ectopic (prior to test)	1
White count above 10 M	10	Cervicitis-endocervicitis	26
Red count below 4 Mil	8	Patent tubes (75%)	20
Pessaries	5	Non-patent tubes	80
Clots at periods	62	Operations by me	20
Cystic ovaries	20	Pregnancy following test	15
Abscess Bartholin gland	1	Average blood pressure 110/	63
Sterile husbands	1	Albumin in urine	1
Polyps	1	Sugar in urine	1
Appendectomies	37	Enlarged thyroid	7
		No. patency tests	239

AVERAGE FOR 500 CASES (1927-28-29-32-34 SERIES)

Average age	28	Syphilis	1.6
Average menstrual age	13	Fistula in ano	1
Average number years married	6	Fissure in ano	1.8
Previous operations	39	Gonorrhea (proved)	6.4
D. & C.	28	Heart lesions	3.4
Headaches	62	T. B.	2
Backaches	69	Fibroids	6
Leukorrhea	44	Constipation	52
Tonsils removed	47	One or more pregnancies	34
Painful coitus	18	Malposition of uterus	41
Dysmenorrhea	60	Miscarriages	20
Hemorrhoids	3	Ectopic (prior to test)	1
White count above 10 M	20	Cervicitis-endocervicitis	36
Red count below 4 Mil	23	Patent tubes (21.8%)	46
Pessaries	7	Non-patent tubes	54
Clots at periods	49	Operations by me	20
Cystic ovaries	23	Pregnancy following test	10
Abscess Bartholin gland	2	Average blood pressure 110/	72
Sterile husbands	1	Albumin in urine	2
Polyps	1	Sugar in urine	.5
Appendectomies (5th 100)	37	Enlarged thyroid (5th 100)	7
		No. patency tests	216

The age of the patient in any group under discussion is of definite benefit hence the average of 28 years also brings to mind the average menstrual age of 13, which is normal. The number of years married has special sgnificance from the fact that some of my cases have become pregnant after having been married 14 years and with no other treatment instituted except the tubal patency test.

Previous operations has a very important bearing from the fact that a large number of the cases have been rendered sterile from adhesions subsequent to operations.

Dilatations and curettages have apparently been detrimental in a number of cases and it is possible that undue scraping around the tubal ostium may cause cicatricial tissue with obstruction.

Headaches and backaches are frequent accompaniments of menstruation and pelvic pathology and it is not surprising that 62% of the cases suffered such complications. Both of these conditions when originating from pelvic pathology are usually relieved by proper treatment.

Leukorrhea is such a common complaint in this type of patient that the only scientific method of diagnosis is to make cultures and smears in every case and know what character of infection you are dealing with. A white discharge is rarely infectious while all yellow discharges contain either gonococcus, streptococcus, staphylococcus or the colon bacillus. I recall one case in which I found a pure growth of gonococcus where there was no inflammation or leukorrhea and where the cervical mucus was as clear as the raw white of an egg. The reason for taking cultures and smears on this patient was that she had a suspicious arthritis in the wrist joint. In my experience from 75% to 90% of the cases of sterility appear as a sequel to gonorrheal infections.

It might be of interest to a throat specialist to know that 47% of my cases have had former tonsillectomies. Focal infection does not always lie in the tonsil but I think just as often is located in an infected tube.

Painful coitus has occurred in 18% of the cases and occasionally accounts for sterility. The cause of this condition should be studied and relieved where possible.

Dysmenorrhea occurred in 60% of the cases and is a common complaint in menstruating women who have not borne children. I encounter many women in this particular work whose tubes are definitely closed and who have never suffered from dysmenorrhea and it is my experience that obstruction of the tubes per se is not an etiological factor in dysmenorrhea. This is definitely contrary to the belief of the menstruating woman.

Hemorrhoids are common during and following pregnancy but in women who have not conceived I have discovered only 3%.

The blood counts are both valuable and informative but I have only listed them here when the white count is above 10,000 and the red count is below 4,000,000. A white count of 10,000 or above should make you search for the cause and a red count below 4,000,000 usually indicates mild or severe anemia and requires treatment. For anemia in this type of case I have found nothing so satisfactory as iron in weekly five cc. doses intravenously. It is without doubt the best regulator in cases of amenorrhea known.

Pessaries deserve special mention and 7% of the cases have worn some form of pessary prior to consulting me. Pessaries are valuable particularly in cases of descensus of the uterus, especially in the aged. They give marked relief when properly inserted, and cared for, and permit these old women to pass their remaining years in comfort. The next most valuable place for a pessary is in cases of retroversion, especially in women who have not borne children, and many of these will conceive where the uterus is properly supported, and with no other medication. In a majority of cases of women who have borne children the use of a pessary is only a temporary measure and the uterus falls back into its original position when the pessary is removed. This type of patient requires operative interference. Stem pessaries, except in antiflexion cases, are an abomination, and are without doubt the etioligical factor in many cases of sterility.

Clots at the periods are of no special significance except where they are very large and produce dysmenorrhea. Since 49% of the cases pass clots at the periods, and few of them cause pain, I feel that I am justified in making this statement.

Cystic ovaries have occurred in 23% of my cases and are frequently the cause of sterility, this fact having been satisfactorily demonstrated where the cyst has been removed and conception has followed without other treatment.

Abscess in Bartholin's gland is exceedingly common in acute gonorrheal infection. Smears and cultures made from these abscesses have proved them to be due to the gonococcus in 100% of my cases.

I have been surprised at reports in the literature stating that sterility in the female was due to sterile husbands in as high as 25% of the cases. I have found primarly sterility in the male in only 1% of my cases.

Cervical polyps are exceedingly common and are occasionally the cause of sterility. A patient in my office last week, from whom I removed a cervical polyp one year ago, came in to show me her baby. This patient was 34 years of age and said that she had been treated by a number of physicians and told that she would never conceive. The only treatment I gave her was removal of the polyp in my office with cautery and testing the patency of the fallopian tubes, which I found normal.

I do not have a Wassermann done as a routine but only in those cases where the history suggests the possibility of syphilitic infection, therefore only 1.6% were positive.

I have been struck with the fact that we find many unsuspected conditions when they are searched for, consequently I have found fistulae and fissures in ano in 1% and 1.8% respectively.

All of the cases presenting leukorrhea have cultures and smears made and 6.4% of the cases have shown a pure growth of the gonococcus. All cases of this character where the discharge is yellow, which do not show the gonococcus, invariably show staphylococcus, streptococcus or both.

It has never been my good fortune to find the gonococcus present in any case where the infection has been present for one year or longer. The majority of cases of leukorrhea can be cured by local applications, some require the use of the cautery, while a small number need coning out or amputation. Douches are absolutely useless as a cure but are useful as a cleansing agent during the acute stage.

One would not expect to find heart lesions common at this age period and only 3.4% has shown such pathology.

Tuberculosis must be kept in mind always and where there is the slightest suspicion of such involvement sputum and X-ray examinations are made. I have found 2% of this series tuberculous. One of these cases was diagnosed as a tuberculous salpingitis, operated on and cured.

Fibroids are among the most frequent conditions found during pelvic examinations and are frequently a cause of sterility, especially where the tumor encroaches on that part of the tubal canal which is included in the walls of the uterus. Many cases of primary sterility lasting over a period of ten years or more have been found to have uterine fibroids.

Constipation is such a common complaint that it is hardly worth mentioning in a paper of this character. Fifty-two per cent of these cases have suffered from constipation and I believe a large majority of them are of the habit type which is so common in many women from neglect.

Secondary sterility is a very common complaint and 34% of my cases have been of this type. There are a number of causes for this among which I shall mention post-partum infection, abortions, miscarriages, lacerations, tumors, malpositions of uterus and a number of others. Abortions have proved a fertile field for subsequent sterility. Kakuschkin in an observation on 1921 women found that 50% of them became sterile for more than two years following artificial abortion. He found the average number of abortions per woman in this series was 2.34% while the average normal delivery was only 1.87%.

Malposition of the uterus is a major cause of sterility in nullipara, especially retroversion and antiflexion, the latter being among the hardest conditions to relieve by any method known. Pregnancy followed in a majority of the cases of retroversion in the nullipara after the insertion of proper pessary. The place occupied by malposition is well demonstrated by the fact that 41% of my cases have suffered from this condition. Miscarriages and abortions alone have apparently accounted for 20% of my cases.

Ectopic pregnancy is a fairly frequent occurrence but in a series of this type I have found only 1% followed by sterility.

Cervicitis and endocervicitis are very common causes of sterility and 36% of my cases fall under this heading. Many cases will conceive when inflammatory conditions have been relieved and the treatment outlined under leukorrhea is applicable here.

My findings in regard to the patency of the fallopian tubes compare favorably with those of other gynecologists and show 46% in this series. Of the five hundred cases 21.8% of those in whom I was able to pass air through the tubes have been known to become pregnant. I have not sent out letters to these patients to find out the exact number who have conceived but am giving you figures on those whom I happen to know have been successful. As you are well aware it is almost impossible to get replies from patients even though you send them a self-addressed and stamped envelope. In 54% of these cases the tubes were permanently closed. I have operated on 20% of these latter cases and have found the diagnosis correct in every instance. Plastic operations on the tubes are rarely followed by conception in more than 8% of the cases, and I do not advise this operation unless the patient has ample means and does not object to a two weeks confinement in the hospital, and then only after advising her of the small percentage of successes.

Pregnancy following insufflation occurred in 75% of my last series of one hundred cases in which I was able to get air through the tubes. This high percentage of successes has been highly gratifying.

The blood pressure has been taken on all the women whom I have examined for many years and the average is 110/72, and this appears to be normal for women of this age period.

Albumin in the urine is not common in young women and I have found only 2% in this series. All specimens are obtained by catheter where there is any leukorrhea and this rules out all chance of contamination when specimens are obtained per via naturalis.

Sugar also is rare in women of this age and I have found only .5% in this series so affected. I have learned to suspect sugar in young obese women especially where there is a vulval or vaginal irritation and frequently find it in this type.

It is a well known fact that the thyroid, among other ductless glands, is a frequent contributor to sterility and 7% of my cases have had demonstrable pathology. In my experience hypo-thyroidism accounts for the larger number of cases.

The number of patency tests porformed on any individual is determined by the circumstances in that particular case. The majority of cases are subjected to only one test, this being sufficient to make a positive diagnosis, while many others require repeated tests. For instance, a patient who does not conceive following the first test, where the tubes are patent, and after the husband has been proven potent, the test is repeated seven days after the menstrual period for two or three months.

The average number of tests which I have performed in each series of one hundred cases is 216.

It gives me a great deal of pleasure and satisfaction to state that there have been no harmful sequellae in any of my cases. Practically all of

them have been done in my office without anesthesia. There is an occasional case on whom it is desirable to perform the test under an anesthetic and these cases are invariably done in the hospital. The majority of my cases have been tested with a simplified apparatus devised by myself some thirteen years ago and which has proved eminently satisfactory.

Having had so many requests for reprints on all the articles I have written on this subject I have found it expedient to go somewhat into detail regarding the findings in this large series of cases and I shall conclude with some general remarks on the subject.

Since I endeavor to do only the necessary and common sense things, and not subject my patients to any unnecessary expense, a basal metabolism test is done only in those cases where indicated.

I am frequently asked if I inject the tubes with lipiodol and use the X-ray to locate the seat of obstruction. This I do not do for what appears to me a very good reason; that is, the test proves beyond the shadow of a doubt that the tubes are obstructed and nothing short of an abdominal section would reveal what would be necessary to relieve the obstruction, therefore, I consider this an unwarranted expense. Most patients do not object to the simple office test but the large majority balk at hospitals and anesthetics. There are so many conditions that cause sterility I shall only enumerate a few of the more common ones. Among the local causes might be mentioned intact hymen, dyspareunia, tumors, cysts, cervical stenosis, cervicitis, and endo-cervicitis, malpositions of the uterus, infections, adhesions, lacerations, polyps, imperforate hymen, and tuberculosis.

Other causes may be certain constitutional diseases, endocrine disturbances, vitamin deficiencies, incompatibility and in consanguinity. The latter is said to have accounted for about 30% of sterilities in European royal families. Probably 10% of all marriages are involuntarily barren.

Conception sometimes follows the simplest form of medication or change of method so that it is impossible to always state definitely that the individual case might not have conceived without any treatment.

Knaus claims that women who have the regular menstrual cycle of 28 days can only conceive from the 11th to the 17th day of the cycle. My advice is to take this cum grano salis where pregnancy is not desirable, for we have all seen cases conceive following a single intercourse at any time during the cycle.

There are cases in which the tubal patency test is done as a therapeutic measure and I have several cases of dysmenorrhea which have been remarkably benefited by this simple measure. Why I do not know. Ordinarily this test should not be performed on unmarried women without specific indications. I shall shortly report 100 cases of this type with the indications and the results.

The contraindications to tubal insufflation are: serious cardiac, pulmonary or renal disease; cervical or vaginal infections; large tumors or cysts, and never when a patient is menstruating.

Artificial insemination can be practiced in selected cases with a small percentage of takes.

Examination of the semen may be done post-coital, as advocated by Huhner, or by using a condom specimen.

In determining the patency of the fallopian tubes it is easy to have your assistant place the stethoscope over the distal extremity of the tube and detect gas bubbling through. The gas used in the test is of little importance; some claim that the use of carbon dioxide is preferable on account of the rapidity of absorption, others use oxygen, I use nothing but free air. With the use of my simplified apparatus, with the bulb between your fingers, it is easy to discern the sudden relaxation of pressure when the air escapes through the tubes into the abdominal cavity and at the same time you notice the mercury drop in the gauge. Following this, when the patient assumes the sitting posture, if the tubes are patent, there is a pain in the right shoulder which is positive evidence that at least one of the tubes is patent.

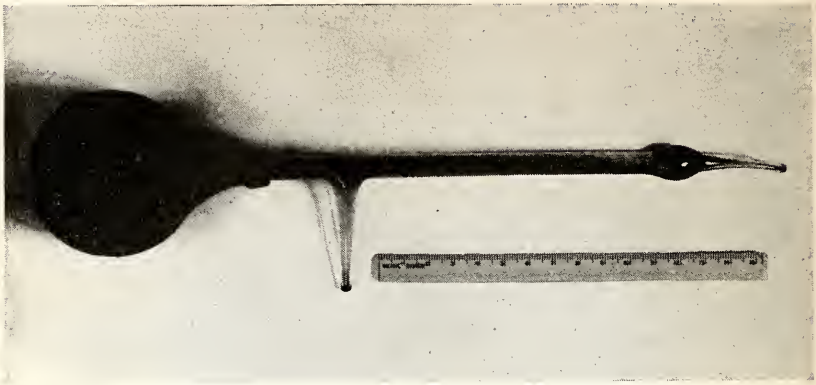
The use of the Keyes-Ultzmann metal canula with a rubber acorn fitted over the tip is not very satisfactory in my hands since this rubber, after being used a few times, has a tendency to slide up on the canula and permit the tip to press against the fundus of the uterus with the possibility of rupturing the same if one is not careful. I find my apparatus very much more satisfactory for this reason, and also on account of its simplicity, since the glass bulb makes the rubber unnecessary.

I use a 20% solution of argyrol containing 12 minims of adrenalin to the ounce to paint the cervix in the place of iodine as some patients complain of a burning sensation following the use of iodine.

In the functional cases, or those in which the symptoms cannot be referred to any appreciable lesion or change of structure, a number of things must be taken into consideration. One of the most interesting of these is the study of the endocrine system. Dr. Havelock Ellis says "In the body lie great rivers of hormones which irrigate the human body and profoundly affect the flowering of personality," but I might add that hidden in these rivers are multitudinous personalities of which we know nothing. Dr. Alexis Carroll, in his recent book "Man, The Unknown," gives us abundant evidence of our ignorance of the fluids which circulate through the human body.

The endocrine glands, particularly the ovaries, pituitary and the thyroid seem to be the major offenders in this group, while the adrenal and others are being investigated in this connection. The use of corpus luteum, theelin, prolan, progynon, folliculin and antuitrin S. may be of value in the treatment but in the majority of cases do not seem to turn the trick.

We have not yet pricked the bubble in the stratosphere of endocrine influence.



THE FERGUSON APPARATUS
For testing the patency of the fallopian tubes.
Manufactured by Eimer & Amend, Third Ave., 18th to 19th Sts., New York, N. Y.

The organic cases are the easiest to treat for the reason that their etiology is definitely known and experience has taught us about the percentage of cases in which we can expect definite relief.

DISCUSSION

DR. IVAN PROCTOR: Dr. Ferguson has presented a subject here that I am particularly glad to hear. We have made similar reports before this section, our figures differing somewhat from Dr. Ferguson's. In examination of 100 cases, we found 71% of the types open, 12% partially opened, and the rest closed. Of these six had been corrected with pregnancy following, under treatment of a competent urologist. We found some with chronic endocervicitis. We haven't found nearly as many gynecological indications as Dr. Ferguson. We haven't found anywhere near that percentage.

DR. FERGUSON (closing discussion): We look at it from a standpoint like any other condition. We say there are four things necessary on the part of the male, and four on the part of the female.

The female must produce normal ova. She must have no obstructed passage in the fallopian tube.

On the part of the male, he must have normal production of spermatozoa; he must have a passage open for the spermatozoa to pass through, and no active or chemical injury in this passage, and he must deposit the spermatozoa in the normal way, for the female to receive it.

If we take them from the male and female standpoint, we can usually get to the basis of the cause, and then we can start therapy.

SECTION ON SURGERY

Tuesday, May 5, 1936, 2:00 P. M.

Battery Park Hotel, Asheville, N. C.

Dr. Hunter M. Sweaney, Durham, Chairman

After calling the meeting to order, the Chair announced the following committee appointments:

Committee to Judge Moore County Medical Paper: Drs. McNider, Knight, and H. B. Haywood.

Nominating Committee: Drs. Ernest Bullock, Foy Roberson, and R. O. Lyday.

The Chair announced that reading and discussion of papers was now in order:

(1)

I would like to have the report of the Nominating Committee: Drs. Bullock, Foy Roberson, and Lyday.

Dr. Roberson: The Nominating Committee nominates for Chairman of the Surgical Section Dr. J. D. Highsmith of Fayetteville, and moves the nomination be accepted.

Motion seconded from the floor.

Question put by the Chair.

Carried unanimously.

It was so ordered.

The Chair: The fifth paper on this program was read before the first General Session. It will now be read by title only:

"Surgical Significance of Meckel's Diverticulum with Particular Reference to the Occurrence of Peptic Ulcer," by Dr. Donnell B. Cobb of Goldsboro."

CYCLOPROPANE ANESTHESIA

Arthur C. Ambler, M.D., Asheville

Since the recent introduction of cyclopropane for clinical use in anesthesia, there have been many articles in the journals concerning its use and I take this opportunity to discuss cyclopropane anesthesia briefly.

Cyclopropane is a colorless hydrocarbon gas with the formula of C_3H_6, the carbon atoms being arranged in a three point ring with two hydrogen atoms attached to each. It has a characteristic, slightly pungent odor but

is not unpleasant. It is inflammable and explosive but probably less so than ethylene or oxygen-ether or nitrous oxid-ether mixtures. The chances for explosion or fire are certainly markedly lessened by the use of the closed method, using the carbon dioxide absorption technic, which is essential in the administration of cyclopropane.

It was Ralph Waters[1] of the University of Wisconsin who first developed the use of cyclopropane, following the work of Lucas and Henderson of Toronto in 1929 and 1930, and he reported in January 1935 a detailed study of 2200 cases. The gas is being used today throughout the country, particularly in the larger centers and clinics. Although the gas is new and the studies are not yet complete, the reports are most satisfying and we believe we have a valuable and safe addition to our anesthesia armamentarium. Galasso[2] in a recent article on "The Safest Anesthesia vs. the Safest Anesthetic" states that the safest anesthesia is the closed method with the carbon dioxide absorption technic and the safest anesthetic is cyclopropane.

ADMINISTRATION

The patient does not complain of any disagreeable odor. He begins to lose consciousness in about fourteen inspirations and is usually surgically relaxed in about three minutes. Absorption is rapid but relaxation is delayed, i.e., longer than with nitrous oxide or ethylene. Sise and Woodbridge et al[3] state the affinity of the gas for the lipoids of the body accounts for the disappearance of the gas from the closed circuit and the necessity for adding more gas occasionally.

Cyclopropane is not an irritant in proper concentrations but may produce laryngospasm in too high concentrations. It does not increase the flow of saliva or stimulate the production of mucus in the respiratory tract.

The patient usually goes down quietly without the excitement and rigidity seen with the other anesthetics. Due to the high percentage of oxygen employed, respirations are quiet and slow. Likewise the pulse. The color is decidedly pink at all times and of course the blood a bright red. Some surgeons complain of more bleeding while others do not. Apparently this increased bleeding is only in the skin and ceases after the skin is left alone. At any rate, if there is an increase in bleeding, it does not work any hardship on surgeon or patient.

Cyclopropane is not a respiratory stimulant, as ether, but there is no decrease in rate or volume until beginning intercostal paralysis. All observers agree that breathing ceases well before circulation.[3]

Heart rate, blood pressure, and circulation are all well maintained until beginning respiratory depression, when the blood pressure falls and the heart is apt to become irregular, either with extrasystoles, heart block, or fibrillation. Flooding with oxygen or lightening the anesthesia usually corrects this immediately. Cyclopropane gives about the same relaxation as ether and chloroform.

TECHNIC

Although a few men have tried administering cyclopropane by the straight or open method, it is essential that it be given by the closed method on a machine that has been calibrated for cyclopropane, not only because the gas is expensive but in order to obtain accurate measurements for dilution. The gas originally cost $1.25 per gallon but now sells for 40c and it is believed the price will be further reduced. One gallon is usually sufficient for one hour of anesthesia.

Surgical relaxation is usually obtained with a 10% mixture (10% gas and 90% oxygen) although even 4% has sufficed. Waters[4] suggests filling the breathing bag with oxygen and then applying mask to the face, at the same time adding cyclopropane at the rate of 600 cc. per minute from one to three minutes. At the same time the cyclopropane enters the breathing bag, the oxygen rate is reduced to the metabolic requirements of the patient. The gas is then turned off and sufficient time allowed for the patient to become saturated and relaxed. Additional amounts are added as needed. Since the action is somewhat delayed, the anesthetist must by no means hurry from one stage to another lest he get into difficulties. The eyeball may be stationary or roving during good relaxation; the pupil has no value. The lid reflex is lost early and the color is always pink. Therefore, because these usual signs of anesthesia have no value, we are solely dependent upon respiration, pulse, and blood pressure to guide us during anesthesia.

The patient awakes about as quickly as with nitrous oxide, usually without nausea and vomiting.

Because of the high percentage of oxygen (90%) during the anesthesia, the pulse and respiration are slow and quiet. The pulse remains in the 70's and respiration usually near 16. The quiet breathing is a distinct advantage to the surgeon in chest and abdominal work.

INDICATIONS

It is obvious then that cyclopropane is unique in that it stands by itself in the following characteristics as an anesthetic gas:

1. High percentage of oxygen used
2. Non-irritant
3. Not stimulating to pulse or respiration
4. Quick induction and rapid recovery
5. Capable of producing good relaxation

Its chief fields of usefulness seem to be:

1. *Thoracic surgery.* Here it has been a godsend to us, particularly for our thoracoplasties, lobectomies and other major chest surgery. The high oxygen content is ideal for these patients who already have a lowered vital capacity. Due to their disease, or the destroying of the negative pressure in the pleura and the position on the table often handicaps the

patient to a distressing and embarrassing degree. Cyclopropane anesthesia however lessens this.

2. *Tuberculous patients* being operated upon other than for thoracoplasties, when spinal or local is not advisable. Cyclopropane is not contraindicated in pulmonary tuberculosis.

3. *Short operations* where good relaxation is essential, as fractures, pelvic examinations, suprapubic operations, etc.

4. *Anemia.* The high oxygen content certainly makes cyclopropane ideal.

5. *Poor risks,* as from shock or marked debility.

6. *Cardiac cases.* Observers point out that there is need for more study since high concentrations of cyclopropane have shown deleterious action on heart muscle. It has not shown such action however in low concentrations. Therefore, where the relaxation need not be too deep, cyclopropane would seem to be indicated, particularly when there is decompensation.[3] The high oxygen content, the slow pulse and respiration seem to indicate cyclopropane rather than any other inhalation anesthetic.

7. *Obstetrics.* Nitrous oxide probably remains the best gas for analgesia during second stage pains but where anesthesia is desired for forceps, manipulation, delivery, or repair, cyclopropane is ideal. It is not necessary that the patient have morphine before cyclopropane which eliminates the morphinized baby.

It may be used in all types of risks, young and old.

In general, Waters and Schmidt[4] find it replacing ethylene to the satisfaction of the anesthetist, surgeon and patient. They choose it in preference to ether in well over 75% of cases. In cases in which ether is still used, there seems to be an increasing tendency to use cyclopropane in preference to nitrous ovide as a means of inducing ether anesthesia.

CONTRAINDICATIONS

With the exception of deep anesthesia in a bad cardiac case, I know of no contraindication to cyclopropane as far as the patient is concerned.

Due to the explosibility of cyclopropane, precaution must be observed at all times but with the closed method there is no gas escaping in the room and the only source for explosion would be static in the anesthesia machine. We have been using the actual cautery, electrical knife, electrosurgical unit, and other electrical equipment while giving cyclopropane.

On account of the potency of the gas, cyclopropane should not be administered by an inexperienced anesthetist and not by an experienced anesthetist until he has seen it used several times. The equipment for giving the gas must be calibrated especially for cyclopropane. I do not mean to leave the impression that new equipment must be bought solely for cyclopropane but since we are now using the closed method with CO_2 absorption technic for ether and the other gases, new equipment is necessary if modern anesthesia is to be practiced.

PREMEDICATION

For the reason that cyclopropane is not a respiratory stimulant, we are careful of our preoperative morphine and barbiturates. It is not necessary to use morphine preoperatively but I do think its use tends to give better results. It should however be given in smaller doses than ordinarily and without atropine. I have been using avertin extensively and agree with Dr. Harold Griffith[5] of Montreal that avertin and cyclopropane form the nearest approach we have yet made to the ideal anesthetic. Patients who have had other types of anesthetics and then come to avertin-cyclopropane are high in its praise. The nurses who care for the patient postoperatively are most enthusiastic.

My own results and experience with cyclopropane have been interesting and varied. At times I have been amazed at the relaxation obtained, to be followed by a rapid recovery. On two occasions, I was not able to even quiet the patient. One patient was a strong, husky farmer boy who became wild and almost unmanageable. The other was an alcoholic, 71 years of age. Both had had morphine preoperatively but of course were of the resistant type. I have had splendid results with those cases which did not need a constant deep relaxation. On several occasions, without any warning and with no change in signs of anesthesia, the patient much to my embarrassment began to cough. This however has not happened as frequently since I have become more familiar with the gas. We recently had an alcoholic woman who was extremely difficult to relax with ether for a D. & C. The same woman, a few weeks later, was given cyclopropane for a hysterectomy and she behaved beautifully. A healthy young man, weighing about 190 pounds, had an orthopedic operation on his arm, under cyclopropane anesthesia, the operation lasting one and a half hours. By the time he was transferred from the operating table to stretcher, he was awake. He smoked a cigarette on returning to his bed and one hour later I was surprised to find him eating a regular house dinner. I have had one death following cyclopropane,—a woman 67 years old, with intestinal obstruction, moribund when she came to the operating room. She died a few hours later, apparently from shock and toxemia.

I have used cyclopropane on a few occasions for induction in ether cases but it has only been in those resistant cases where relaxation was not complete with cyclopropane and it was felt that the gas should not be pushed. However, when cyclopropane is used for induction, there rarely is any reason to switch to ether as the patient is sufficiently relaxed without it.

For the past few months I have not used nitrous oxide-oxygen as an anesthetic for the reason I obtain better results with cyclopropane, the patient's color is better and I feel safer and have more confidence in it. I still use nitrous oxide for ether induction only for the reason it is cheaper.

SUMMARY

The addition of cyclopropane to the field of anesthesia promises to give us a most valuable and useful gas. Because it is non-irritating, capable of deep relaxation, swift in action, and requires high oxygen content, it is particularly indicated in certain conditions. Even though it is inflammable and explosive, the chances for fire or explosion are reduced to a minimum while being used by the closed method. Combined with avertin it makes an ideal anesthetic.

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DISCUSSION

THE CHAIR: Discussion of Dr. Ambler's paper will be led by Dr. R. L. Wall, Winston-Salem:

DR. WALL: Gentlemen, I want to contgratulate Dr. Ambler on his excellent paper on this the newest, and I believe the best of the general anesthetics. It is just one more valuable agent to be added to our anesthesia repertory. I do not believe that any branch of medicine or surgery, in the past two decades, has made more progress than has been made in anesthesia.

Twenty years ago we had but two or three anesthetics. Today we have our local, regional, spinal; we have chloroform, ether, nitrous oxygen, cyclopropane, and avertin as a valuable basic anesthesia—cyclopropane-avertin are not so generally used.

I do not think any anesthetic should be used readily in every patient. I think the problem is to adjust our anesthetics to their proper place, and for the proper condition. This takes close coöperation between the surgeon and the anesthetist. I believe the anesthetist should be the surgeon's best co-worker.

My experience with the gasless anesthesias started in 1914, when I first started nitrous oxygen for minor, short operations. I used them for shorter, and finally for larger; and finally used nitrous oxygen for abdominal operations, supplementing it with ether. Of course when there were some complications to the use of ether, we got along with the use of nitrous oxide, but I cannot say it was not a considerable struggle for both the anesthetist and the surgeon.

In 1933 ethylene came forward, and we started using ethylene in Winston-Salem in 1934. We found it had distinct advantages over nitrous oxide, and we could relax our patients better. We were not entirely satisfied though, and we started using cyclopropane last year. And I can say cyclopropane is far ahead of ethylene.

In the first place, as Dr. Ambler has mentioned, is the greater amount of oxygen you can get with cyclopropane. With ethylene you have to give ninety per cent of gas and ten per cent of nitrous oxygen. With cyclopropane you give eighty to ninety per cent oxygen, and only ten to fifteen per cent of cyclopropane. In other words, either nitrous oxide or ethylene, you give gas enough to keep the patient alive and in good condition; while with cyclopropane, you give oxygen and just enough of the gas to keep the patient asleep and well relaxed. The cyclopropane itself is relaxant, which produces as much relaxation as ether. In about ninety per cent of my patients, I do not give any ether at all. In some abdominals I do not give any ether, and I am giving less ether as we become more familiar with this anesthetic.

Another thing about this anesthetic is the quiet breathing. On account of the greater per cent of oxygen you have quieter breathing, and in case of operations done on the intestines, this is of great advantage to the surgeon.

One illustration the doctor did not bring out among a number of them here, is Caesarean sections, you do not have to get the patient moribund before the operation and you do not have any narcotized baby, due to the amount of oxygen you gave the patient.

In conclusion we must say that you have to realize the small amount we have to give. It is very potent as an anesthetic, and should only be used by a trained anesthetist who has seen cyclopropane used several times.

Dr. Julian Moore: Mr. Chairman, I would like to add a surgeon's viewpoint to the discussion. I was brought up like most of us who are in hospitals, where the anesthesia was allowed to be given by nurses. I have come to the conclusion it is wrong. Most of the advancement in anesthesia in the past few years has been made by doctors who are specializing in anesthesia, and I believe anesthesia should be administered by physicians in preference to nurses. Secondly, unquestionably the carbon dioxide absorption method is far superior to administering any kind of anesthetic we yet have. I still have in my own practice—and most of our colleagues here in Asheville—seldom used ethylene in the drop method. Since two of our larger hospitals are equipped with closed machines for the administration of any type of anesthetic, I find that method much better than the open method.

I am not yet convinced that cyclopropane is here to stay, because I do not think we yet know enough about it. From my own personal experience, however, in thoracic surgery, while limited to a few cases, I am

convinced more that avertin and cyclopropane is satisfactory particularly in tuberculous patients.

It has been very difficult for us at times to obtain complete anesthesia with gas only. I do not think ether should be used by a tuberculous patient. These patients breathe quietly—there is practically no moving—their color is good, and they have stood it extremely well.

For the past six years I have been using an electrical surgical technique. I am not sure that we are absolutely safe in using cyclopropane. We have had no difficulty, but I do believe this, that this anesthesia is much better than we have heretofore had. And I prefer the cyclopropane anesthesia.

Dr. Thomas Sparrow: I would like to say I believe cyclopropane is the coming anesthetic. When I was at the clinic ether was used as a general anesthetic in all operations, and this year it has been reversed, and cyclopropane is used in ninety-two per cent, nitrous oxide in one per cent. I do not agree entirely with Dr. Ambler and Dr. Wall on the relaxation that can be obtained for abdominal operations with cyclopropane. I have found that men accustomed to deep ether are not satisfied with cyclopropane alone, and personally I prefer to add a small amount of ether—just about two ounces. Cyclopropane does not, I think, occupy the place of safety that ethylene does.

When you have seen two or three cases that stop breathing, it scares you quite a bit, and personally, I prefer a small amount of ether, which is necessary for abdominal operations, especially to men who are used to ether anesthetic.

I think when cyclopropane becomes more and more used, you will hear of explosions. Generally ethylene is a valuable anesthetic, and because of the publicity of those explosions, it is usually denied admission in many hospitals. I hope this will not happen to cyclopropane.

From the standpoint of medication. I prefer to give no medication at all, except in those cases where the patient is highly nervous. In those cases I give small doses of morphine.

Dr. Ambler and Dr. Wall have both tried out the agency of cyclopropane. I feel as they do, it is the ideal anesthetic. I am glad to see the surgeons are hearing more and more about it.

Dr. A. G. Brenizer, Jr.: The speaker who has just spoken is an expert anesthetist. In my first experience with cyclopropane, I did not have that, and I had a good deal of trouble with it, and I came very near losing a very dear friend with it. I was never so excited in my life. You have heard of the dilution here. It is ten per cent of oxygen, which means while you are using gas you cannot encroach upon that too much. He reverses all that. . . In the hands of Dr. Montgomery it is perfect.

Dr. Ambler (closing discussion): There has been some discussion about using the electrical surgical units with the cyclopropane. I wrote to Dr. Waters and asked him very frankly just how this was to be used. He

points out that the cavities of the body—the abdomen, the pleura and the bladder are known to collapse with gas, and he thinks, of course, that is true of many other anesthetics. He says he has not heard of explosions with the electrical unit used in the abdominal cavity or pleura, but he believes now it is perfectly safe so long as you are not using electrical units along the respiratory tract. I think Moore is right, that he cannot get and I cannot get good results with cyclopropane alone. He cannot relax particularly the upper abdominal tract without some ether. Dr. Waters thinks ether is not needed but he is far more expert, and has been using cyclopropane a great deal more than the rest of us, and I think he is just a better technician.

HYPERPARATHYROIDISM—ITS RECOGNITION AND TREATMENT

With Report of Two Cases

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Hyperparathyroidism is a disease entity caused by over-secretion of the parathyroid hormone. It is characterized by a disturbance in calcium metabolism whereby calcium is mobilized in increased amounts from its storehouse in the bones, transported in high level in the blood and excreted in excess from the kidneys (Fig. 1). Clinically it is recognized by demineralization and distortion of the skeletal system, hypercalcaemia with a decreased response of the neuro-muscular mechanism to stimuli and deposition of calcium in the kidneys.

HISTORICAL

Although the parathyroid glands were described by Sandstrom[1] in 1880, their significance was not recognized by early schools[2 3 4] of thyroid surgery where descriptions of tetany following thyroidectomy were common, and their true function was not definitely established until 1900 when Vassale and Generali[5] showed that removal of the parathyroid glands resulted in tetany. That the parathyroids might have some influence over the production of the destructive and deforming bone lesions described by von Recklinghausen in 1891 (and since then known as von Recklinghausen's disease of bone or osteitis fibrosa cystica) was suggested by the reports of Askanazy[6] in 1904 of an autopsy on a patient with von Recklinghausen's disease of bone in whom a parathyroid tumor was found. However, he failed to associate specifically the parathyroid tumor with the bone lesions.

MacCallum and Voegelin[7] in 1909 first demonstrated the relationship of the parathyroids to calcium metabolism when they showed uniform reductions in blood calcium levels in parathyroidectomized animals. In 1907 Erdheim[8] found the parathyroids enlarged in rickets and in osteo-

malacia and postulated that the parathyroid enlargement in bone diseases was a result rather than the cause of the bone changes.

In 1925 Mandl[9] of Vienna studied a case of von Recklinghausen's disease of bone. Believing in Erdheim's theory that parathyroid enlargement represented a futile attempt on the part of the parathyroids to compensate for the derangement in ossification and was the result rather than the cause of the disease, he successfully grafted normal parathyroid glands to his patient, only to find that his condition was made worse. He then explored the neck, removed a parathyroid tumor, as well as his transplants, and was delighted to see his patient, previously bed-ridden and wracked with pain, return to near normal health. Following the publishing of Mandl's epoch-making case in 1926 numerous case reports of removal of parathyroid tumors have appeared until now there are over 100 in the literature.[10 11 12 13 14]

PATHOLOGY

Parathyroid Glands: Hyperparathyroidism may be produced by one or more functioning adenomas of the parathyroid gland or by diffuse hyperplasia of all the parathyroid bodies. Castleman and Mallory[15] found 140 of their 162 collected cases, in which description was adequate enough for classification, caused by adenomas. Of these, twelve had multiple tumors. Twenty-two of the cases were caused by diffuse hyperplasia of all parathyroid tissue. According to the microscopic picture they subdivided each group into a wasserhelle or water clear cell type and a chief cell type. In the adenoma group 114 were of the chief cell type and 14 wasserhelle cell type. Of the hyperplasias 19 were wasserhelle cell type and 3 chief cell.

Bone: The bones represent the only storehouse for calcium in the body. The negative calcium balance of hyperparathyroidism depletes the bones of their calcium. With this demineralization osteoclasts appear in large numbers in the bone and with them osteoblasts. Fibrosis within the bones subsequently develops and probably represent a proliferation of the reticular cells which form the osteoblasts and osteoclasts.

Multiple cysts may appear in the fibrous tissue or the osteoclasts may proliferate to the point where they cause palpable tumors—osteoclastomas. This advanced stage of the disease has been termed von Recklinghausen's disease of bone or osetitis fibrosa cystica.

Kidneys: Calcium and phosphorus excreted in excess by the kidneys may be precipitated either in the pelvis of the kidney (nephrolithiasis), in the lumina of the proximal tubules or in the kidney substance itself (nephrocalcinosis). These latter changes may lead to marked impairment of renal function.

Other Organs: Metastatic calcium deposits may be found widely scattered over the body. Dawson and Struthers[16] report a case with calcium infiltration in practically every organ of the body. Hoffheinz[17] reports calcifications in the lung as well as the kidney. Penneke[18] described a patient

dead of chronic nephritis in whom calcifications were present in the left side of the heart, small arteries, thyroid, kidneys, spleen, skin and walls of the parathyroid tumor.

SYMPTOMATOLOGY

Symptoms of hyperparathyroidism may be classified as: (1) those caused by the high level of calcium in the blood; (2) those caused by demineralization and distortion of the skeleton; and (3) those dependent upon the precipitation of lime salts in the kidneys.

Hypercalcaemia: In the reduced blood calcium of parathyroid deficiency the hypertonicity, increased excitability and tendency to tetanic spasm of the muscles is familiar. Exactly the opposite occurs in hyperparathyroidism. Weakness, lassitude and generalized muscle atony are almost uniformly present and usually represent early symptoms.

Constipation, faulty memory, diminution in visual or auditory acuity, anorexia, loss in weight and nervousness are frequent complaints. Nausea, vomiting and abdominal pain have occurred in a few of the cases and are probably caused by toxic manifestations of acute hyperparathyroidism rather than by hypercalcaemia.

Skeletal Changes: Decalcification of the bones makes itself evident first by pain. The discomfort is usually first noticed as a dull ache over the lower back or the long bones. It is intensified by exercise and often associated with stiffness in the joints. Such pains are usually attributed to rheumatism or neuritis for years before the true nature of the malady becomes evident. As the bone lesions progress pain may become diffuse and so intense as to require the constant use of narcotics. Localized bone swellings, solitary and painless at first but later becoming multiple and painful may occur in the jaws, tibiae, phalanges or elsewhere. Pathological fractures are common as the bone lesions progress. Non-union and mal-union of these fractures is the rule. This, with the bowing of long bones and collapse of flat bones, may result in all types of deformities—curvature or kyphosis of the spine from collapse of vertebral bodies, collapse of the thoracic cage or of the pelvis, bowing or weird distortions of the long bones of the extremities, symmetrical or asymmetrical enlargement of the head, loss in height, etc. In the advanced stages such patients are completely incapacitated, grossly deformed and so wracked with pain as to make life a burden.

Kidney Changes: Polydypsia and polyuria are frequently present and probably caused by the diuretic effect of the hormone. Sometimes it is so prominent a symptom as to suggest diabetes insipidus[19]. The large quantities of calcium and phosphorus excreted in the urine may remain in solution. Or they may be precipitate in the bladder and expelled at the end of urination as "sand" or "milky" urine. Renal stones may form if these minerals are precipitated in the kidney pelvis. The first symptom in each of our patients was renal colic; in one 15 years, and the other 18 years before they were first seen. Any of the complications of renal stone may

develop and be the precipitate cause of death. Calcifications may develop in the parenchyma of the kidney and lead to symptoms of renal insufficiency. Such was the case in 19 of the 83 cases studied by Albright[20] and in both of our patients (Fig. 2 and 3).

CLASSIFICATION OF CLINICAL TYPES

All of the early cases of hyperparathyroidism reported showed the typical changes of von Recklinghausen's disease. In recent years it has become evident that other forms of the disease exist, depending upon the predominance and extent of skeletal or renal changes. Thus the following clinical types of hyperparathyroidism may be recognized:

(1) The classical form in which typical skeletal changes of osteitis fibrosa cystica predominate; (2) the osteoporotic form in which demineralization of the skeleton is diffuse but there is no tendency to cysts or tumor formation; (3) the renal form in which renal stones or calcifications within the kidney pyramids represent the principal changes.

DIAGNOSIS

The recognition of hyperparathyroidism except in the far advanced case is dependent upon laboratory diagnostic aids. Here again the changes may be classified as those dependent upon (1) hypercalcaemia, (2) demineralization of bone and (3) precipitation of calcium in the kidneys.

Hypercalcaemia: The metabolic changes produced by over-secretion of the parathyroid hormone are characterized by (1) an increase in serum calcium, (2) a decrease in serum phosphorus, (3) an increase in plasma phosphatase and (4) an increased excretion of calcium and phosphorus from the urine.

Hyperparathyroidism is almost unique in giving the combination of a high serum calcium and a low serum phosphate. Metastatic malignancy or multiple myeloma may give a high serum calcium level but in these the serum phosphorus is usually elevated also. Rickets and osteomalacia may be associated with a low serum phosphorus but in these the serum calcium is not elevated.

The concentration of serum calcium in the normal person varies between 9 and 11 mgm. per cent. In hyperparathyroidism the range may be from 12 to 23.6 mgm. per cent, the highest figures having been reported by Snapper[21]. The normal level of serum phosphorus in the blood is 3 to 4. In cases of hyperparathyroidism it may be from 1.5 to 2.5.

Phosphatase is an enzyme capable of splitting organic phosphorus compounds. It is elevated in the blood serum of patients with advanced bone changes of hyperparathyroidism from a normal of 1.5 to 4 units,[22] to an average of around 20. It may be normal in this disease when bone changes are minimal, as in both of our patients.

Hypercalcinuria and hyperphosphaturia are constant accompaniments of the negative calcium and phosphorus balance in hyperparathyroidism.

From a practical clinical point of view this evidence is laborious to obtain and seldom necessary. No effort to determine it was made in our cases.

Skeletal Changes: Evidence of skeletal changes of hyperparathyroidism may be obtained by bone biopsies in which the typical histologic picture of the changes of hyperparathyroidism may be recognized, and by X-ray.

The primary change in the radiologic appearance of the bone is decalcification which is *generalized.* This change may be so slight as not to be detected, as in our case 2. When evident it is seen as a uniform, mottled, granular osteoporosis.[23] In addition, the bone trabeculae become indistinct and the cortical bone thinned. Since the bones become soft, bowing, kyphosis, narrowing of the pelvis and coxa vara are common.

Cysts and tumors may develop secondary to these primary changes. Cysts if present are usually multiple though they may be single. They may occur in the medulla or in the cortex. The jaws, pelvis, long bones and the phalanges are the usual sites though they may occur in any of the bones. Tumors usually occur in the jaws, at the ends of the long bones, or in the ribs. In contradistinction to the cysts, they only occur where there is cancellous bone. Pathological fractures usually occur through these cysts or tumors.

The destruction of the hematopoetic elements of the bone marrow by advanced stages of the skeletal changes may lead to anaemia and leucopenia.[13]

Kidney Changes: Urinary calculi may be present in the kidney pelvis, ureters or bladder. Of the 27 cases reported by Albright and Bloomberg[24] in 1935 eighteen had renal stones and in fourteen of these cases the disease was suspected only because of the presence of stones.

Calcification within the kidneys may be so slight as not to be evident on X-ray examination. In four of Albright's cases and in both of ours multiple punctate calcifications outlining the pyramids of both kidneys were present and lead to the diagnosis of hyperparathyroidism.

Impairment of renal function may be present and is assumed to be caused by the calcium deposits within the kidneys. Albright's case 3 had all of the signs and laboratory evidences of Bright's disease. In three others of their cases and in our case 1 there was definite evidence of renal impairment.

TREATMENT

Excision of the over-functioning parathyroid tumor represents the only rational form of treatment for hyperthyroidism.

The greatest difficulty in the surgical procedure is to find the parathyroid tumor. In many of the cases reported in the literature two and three operations were necessary before the tumor was found and in one, the famous Capt. M. reported from the Massachusetts General Hospital, seven operations were performed before the parathyroid adenoma was finally located.

Except for the experience of the group at the Massachusetts General Hospital in Boston it has not been the opportunity of any one surgeon to report more than five[25] operations for hyperparathyroidism. Knowledge pooled from the operative experience of many surgeons and from the dissecting and autopsy room have shown that the parathyroids by no means occupy such a uniform position or are so constant in number as indicated by early anatomic studies. That a wide variety of positions may be occupied by the parathyroid bodies is only reasonable when one considers their embryologic development. They are formed principally from the lateral anlagen of the third and fourth pharyngeal pouches. In their migration caudally they may assume varying positions in relation to the thyroid and to other structures in the neck. Theoretically, it is possible to encounter parathyroid tissue anywhere from the pharynx to the mediastinum between the middle and the deep cervical fascia. No parathyroid tissue has ever been described outside of these boundaries. Thus, the space bounded above by the pharynx and extending below an unknown distance into the mediastinum, limited anteriorly by the middle cervical or pretracheal layer of the deep cervical fascia which lies just beneath the sternohyoid and sternothyroid muscles and posteriorly by the prevertebral layer of the deep cervical fascia resting on the anterior surface of the longus colli muscles, represents the area of search for a parathyroid tumor.

Every effort should be made to find the tumor at the first operation. Adhesions left by the first operator form a tremendous handicap to the one who must search the neck a second time. To this end the surgeon must be familiar not only with the normal anatomical relationship in the neck but with the normal and aberrant locations of the parathyroids. He must be able to recognize the reddish brown glistening appearance of the parathyroids and be prepared to distinguish them from thyroid lobules, collections of fat and lymph nodes.

Figure 4 shows diagrammatically the positions occupied by 127 tumors as found at operation and autopsy in patients with hyperparathyroidism. It will be noted that none of the tumors were found above the level of the superior pole of the thyroid gland. Most of the tumors developed in the inferior parathyroid glands. These are more inconstant in their position than the superior ones and many of the tumors extended downward under the clavicle. Eight of the tumors were in the mediastinum; seven being in the superior mediastinum and one in the posterior. Walton[26] emphasizes the importance of the relationship between the parathyroids and the thyroid fascia as being the factor which determines whether the tumor will be found in close proximity to the thyroid gland or deeply situated in the neck possibly between the trachea and oesophagus, or between the oesophagus and the vertebral bodies as in cases reported by Churchill and Cope.[27] Similarly tumors anterior to the fascia when they descend pass into the superior mediastinum while those posterior to it pass into the posterior mediastinum as in his case 4. Seven of the tumors were found within the

substance of the thyroid gland. This location is a confusing one to the surgeon as a small thyroid adenoma may be mistaken for the parathyroid tumor.

Before operation effort to localize the tumor if possible should be made. Rarely is the parathyroid tumor palpable; if a tumor is palpated it usually is later found to be a small adenoma of the thyroid. X-ray films are taken to outline the trachea and mediastinum. These are studied carefully for the presence of a substernal tumor or displacement of the trachea. Churchill also advises that the oesophagus be studied under the fluoroscope while the patient swallows barium to see if a tumor might be causing displacement or indentation of the oesophagus.

At operation a wide collar incision as for thyroidectomy is used. The pretracheal muscles are divided and the middle cervical fascia dissected from the surface of the gland, exposing freely the entire thyroid gland. The lateral lobes of the thyroid are then freed and rolled inward in turn. To accomplish this fully it is usually necessary to divide the middle thyroid vein. By this means a tumor may be immediately apparent occupying the more or less normal position of one of the parathyroid glands. The adenoma may be firm in consistency and readily palpated as in our first case. On the other hand, however, the tumor may be soft in consistency, moulding itself to the crevices of its position so as to be effectively hidden from view and impalpable. One need not waste time inspecting infinitesimal bits of tissue within the field. Parathyroid adenomas are all of sufficient size to appear as distinct tumors, those in the literature varying in size from that of a hazel nut to that of an orange.

If the tumor is not immediately apparent the areolar tissue in the angle between the thyroid gland and the trachea is entered, the recurrent laryngeal nerve exposed, and the terminal divisions of the inferior thyroid artery explored. The trachea and oesophagus are then exposed, the dissection being carried upward to the larynx and donwward into the superior mediastinum. This procedure is repeated on each side and if no tumor is encountered the mediastinum must be explored. Churchill and Cope[26] direct that the finger be passed into the posterior mediastinum behind the trachea and oesophagus on one side. With this finger in place another finger is passed into the superior mediastinum behind the sternal notch under the middle cervical fascia. Structures within the mediastinum can thus be palpated between the two fingers, and a tumor, if present, delivered into the neck. In one of Churchill and Cope's cases it was necessary to split the sternum before the tumor was found. In all of the others the mediastinal tumors were readily delivered into the neck. All had vascular pedicles which had their origin in the neck and their removal was not difficult.

Because of the possibility of the presence of multiple tumors or of diffuse hyperplasia of all the parathyroid bodies a thorough attempt to inspect all of the parathyroid glands must be made at operation, even though what is taken to be the tumor be encountered early in the dis-

section. Care must be taken that the dissection is bloodless and gentle throughout. Especial care must be taken not to traumatize the parathyroid glands. Since they do not have a supporting stroma the slightest trauma causes a rapidly spreading hematoma which alters their characteristic light brown color and smooth glistening surface, changing them into a redder, more granular-appearing structure which may readily be mistaken for normal thyroid tissue or a hemolymph gland.

Twelve cases have been reported in which two adenomas were found. In such case each should be removed but not unless a third normal parathyroid gland can be found. Beck's[28] patient died in tetany after removal of two adenomatous glands. At autopsy no further parathyroid tissue could be found.

Diffuse hyperplasia of all of the parathyroid glands accounted for 22 of the 162 cases of hyperparathyroidism collected by Castleman and Mallory.[15] Clinically, however, the condition has only been recognized at operation by the group at the Massachusetts General Hospital where Cope[29] reports it the cause of hyperparathyroidism in six of their amazing collection of 27 cases. Before operation they found nothing to distinguish these from the group of patients with adenomas. At operation all of the parathyroid glands are enlarged although there is no uniformity in their size. The glands are "more irregular and of a darker brown hue than adenomatous issue." If the gross appearance suggests diffuse hyperplasia, confirmation of this impression is obtained at once by microscopic examination of one of the glands after frozen section. Such a finding necessitates the painstaking exposure of all of the parathyroid bodies. It is the practice at this clinic to do a total resection of all of the parathyroid glands except one and to do a subtotal resection of this one remaining gland. Using this procedure results seem to be satisfactory in their reported cases, however, Cope says, "It should be pointed out that until a safe replacement therapy is available we are not sure that in these cases surgery will prove to be the best method of treatment." It may be that in this type of case Roentgen ray therapy will prove to be the therapeutic procedure of choice. Cutler and Owen[30] among others have found this treatment of value in the case of parathyroid adenomas. The results, however, are so uncertain that, in the case of adenomas at least, they cannot be compared to those from excision of the tumor.

RESULTS

The immediate result of removal of a parathyroid tumor is an abrupt drop in the serum calcium level, a rise in serum phosphorus (Fig. 5 and 6) and a decrease in excretion of calcium in the urine. If the blood calcium is reduced to below 7 and 8 mgm. per cent tetany usualy develops. The tetany may vary in intensity from tingling sensations and mild cramps to generalized convulsions which may terminate fatally. As a rule, the patients with the most marked bone destruction and highest phosphatase activity have the most severe forms of tetany. The tetany is usually only

temporary and yields to treatment, being caused probably by the fact that the normal parathyroids are functionally inactive and are unable to compensate quickly enough for the sudden removal of a hypersecreting gland. The tetany may be permanent and fatal, however, if too much parathyroid tissue has been excised. This was the case in Beck's case and in some of those where the tumor was removed at secondary operations and normal parathyroids had been removed at the first.

Mild tetany may be controlled by the administration of calcium by mouth. In more severe forms calcium may be administered intravenously, the usual dose being 10 cc. of 10% calcium chloride or from 10 to 20 cc. of 10% calcium gluconate. These may be repeated every three or four hours. If calcium is given intravenously the administration of large doses of parathyroid hormone is seldom required. Cope has found that the parathyroid hormone as available at present does not have a constant effect and is not reliable in replacement therapy in long-continued parathyroid deficiency. He says, "A so-called immunity develops following its administration which in a short time prevents its constant use in large doses over a long period of time. Viosterol, in relatively large doses is the drug from which most benefit can be derived."

Symptomatically, patients with hyperparathyroidism show improvement within a very few days. Fatigability and general apathy present in both of our patients before operation had been replaced by a general sense of well-being before they left the hospital. The appetite improves, constipation disappears, and there is a gain in weight; our first patient gaining 17 pounds in three months. Pain and tenderness in the bones and joints disappear soon after operation, and bed-ridden patients often soon become ambulant. Demineralized bones slowly become recalcified. Impairment of renal function which is associated with renal calculi or nephrocalcinosis usually does not improve, nor is calcium deposited in the soft tissues appreciably resorbed.

CASE REPORTS

Case 1. N. B., Duke Hospital No. 60627, white, female, age 47. Referred by Dr. R. K. Farrington, Thomasville, and Dr. Charles O. De Laney, Winston-Salem, N. C.

This patient began suffering from attacks of kidney colic 15 years ago and throughout the next seven years experienced such attacks from hematuria and passage of stones at intervals varying from twice weekly to every three or four months. Eight years ago she began suffering from chills and fever with her attacks. Seven years ago she was first seen by Doctor DeLaney who found her to have ptosis of the right kidney, and stones and pus in each renal pelvis. In June 1929 he drained several cortical abscesses in the right kidney, removed seven stones from the pelvis of the kidney and suspended it. Following this operation she was much improved for two years but since then and until the present had suffered from recurring attacks of pyuria and pain in the region of both kidneys. For eight years

she had suffered from gradually increasing weakness and fatigability. For six years she had been unable to do her housework or to walk more than two blocks because of weakness. For three or four years she had been constipated. For six or eight years she had noticed pains in the neck, back and both legs at intervals which she attributed to neuritis. In the past six months these pains had been much more frequent and severe. During this time, in addition, she had been quite nervous, memory had been poor, vision frequently became blurred, her appetite failed and she lost 15 pounds in weight.

On examination she was a rather small woman, 26 pounds (12 Kg.) under her calculated ideal weight. The general physical examination showed no significant abnormality except for the presence of a small movable nodule about 2x2 cm. in size over the right lower lobe of the thyroid gland.

She was first seen by Dr. F. M. Hanes at the Duke Hospital on November 14, 1935. He thought that she might be suffering from hyperparathyroidism and directed her further studies, referring her to us when the diagnosis was established.

X-rays showed a rather diffuse mottled decalcification of all the bones. There were no cysts, tumors, or bony deformities. Both kidneys showed punctate areas of calcification outlining the calyces. (Fig. 2)

The blood calcium was 14.9 mgm. %; the phosphorus 2.1 mgm. %; phosphatase 5.5 units.

The bladder urine contained innumerable pus cells and gram positive cocci. Dr. E. P. Alyea studied her urinary tract. In addition to the multiple calcifications in the parenchyma of each kidney as previously noted he found her to have a bilateral hydronephrosis, nephroptosis with kinking of the ureter at the uretero-pelvic junction on both sides, and a bilateral pyelitis. The urea clearance test showed an impaired kidney function. There was failure of concentration of urine on Mosenthal's test. The phthalein excretion curve was low. The NPN was 33 mgm. %.

At operation November 25, 1935, the nodule which was felt in the neck was found to be a small adenoma of the thyroid. As soon as the right lobe of the thyroid was reflected medially a firm rounded tumor could be palpated under the superior pole between the carotid sheath and the trachea. By incising the areolar tissue over it a well-circumscribed, firm, yellowish brown oval tumor about 2x1.8x1.5 cm. in size was brought into view (Fig. 7). It was attached inferiorly by a vascular pedicle to a branch of the inferior thyroid artery and was readily removed. The pathologists made frozen sections of the tumor and reported immediately that it was a parathyroid one. Further exploration of the neck on each side did not reveal any other tumors.

Postoperative convalescence was uneventful. She complained of tingling sensations in the hands on the third and fourth days after operation. The calcium and phosphorus levels promptly reverted to normal following

operation, (Fig. 5). She left the hospital on the eighth day feeling better than she had in years she said. Seen again one month later she gave a history of having had psychic disturbances for three weeks. No other evidence of tetany was present and the blood calcium was not at a tetanic level. It was felt that the symptoms were caused by the menopause. She was put on Theelin. When last seen four months after the operation she was feeling better than she had for six or eight years. Neuritic pains had disappeared. Strength and appetite had improved, she was no longer nervous, there had been no evidence of the emotional unbalance for several months and she had gained 17 pounds in weight. She had had several attacks of pyelitis. X-rays showed no apparent recalcification of the bones and no change in the renal calcifications.

Case 2. H. D., Duke Hospital No. 60688, white, female, age 44.

As in our first case this patient's first symptoms came from the kidneys. Eighteen years ago she suffered from kidney colic on the right side and passed a stone. Four years later she had a similar attack on the left side. From then until the present she has had attacks of pain in the right flank on the average of every two months. These pains were not as severe as the kidney colic, and were not accompanied by hematuria or by chills and fever. For ten or twelve years she had noticed polydypsia and polyuria. She could not say how much water she drank but said she drank about twice as much as anyone else and that her friends often remarked at the large amounts she drank. She suffered from nycturia two or three times nightly and would drink a full glass of water each time she arose at night. For 15 years she had suffered from aching pains in the lower portion of the back aggravated by motion. In the past six years she had noticed gradually increasing weakness and fatigability. For two years she had been nervous and in the past year memory had been poor, visual and auditory acuity diminished, appetite poor and she had lost steadily to a present weight of 90 pounds.

On examination she was a thin, tired-looking woman 50 pounds under her calculated ideal weight. The skin was dry and inelastic. The blood pressure was 140/100. Both kidneys were palpable, neither were tender. The cervix was lacerated, the uterus in retroposition and the perineum lacerated and relaxed.

She was first studied on the Gynecological Service by Dr. E. C. Hamblen. He felt that operative interference for the gynecological conditions was necessary but first wished her urological tract studied. It was when the plain X-rays of her kidneys were studied and their striking similarity to those of our first patient, who was still in the hospital, recognized that hyperparathyroidism was first suspected.

X-rays of the bones showed no decalcification, cysts, tumors or other detectable abnormality. The kidneys showed multiple punctate calcifications in the parenchyma which outlined the calyces almost exactly like those in our first case.

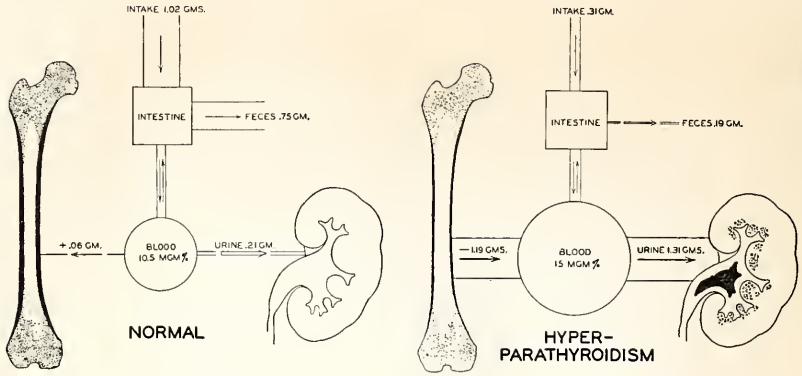

Fig. 1. Schematic representation of the daily calcium metabolism in individuals with normal and excess parathyroid secretion. The normal patient[31] is in positive calcium balance. He excretes less calcium than he takes in the diet, the excretion in the feces being about four times that in the urine. The patient with hyperparathyroidism[32] is in negative calcium balance. He is excreting five times as much calcium as is taken in the diet. Calcium is being withdrawn continuously from its storehouse in the bones, carried in high level in the blood and excreted in excess from the kidneys. The demineralization of the skeletal and the deposition of calcium salts in the calyces of the kidneys and in the kidney pelvis is shown.

The blood calcium was 5.4 mgm. %, the phosphorus 2 mgm. %, and the phosphatase 2.4 Bodansky units.

The urinary tract was studied by Dr. W. L. Haltom. Urine from each kidney pelvis was sterile and neither pelvis was dilated on pyelography. There was rather marked nephroptosis on the right side. The phthalein excretion was normal.

At operation December 5, 1935, a soft, brownish-red parathyroid tumor about 4x2x1 cm. in size was removed from under the superior pole of the right lobe of the thyroid gland (Fig. 8). When this lobe was rolled medially no tumor could be seen or felt as in our first case. Dissection was carried along the inferior thyroid artery until it entered the thyroid gland without encountering any abnormality. A branch of the inferior thyroid artery which coursed upward was then followed and the lower portion of the tumor uncovered. It was of the same consistency as the surrounding tissues and on palpation could not be detected. Because we felt this might be a case of diffuse hyperplasia of all the parathyroid glands the left side was explored immediately. The left superior gland was normal in every respect. Neither of the inferior glands could be detected. The tumor was then approached and was readily removed.

The postoperative convalescence was uneventful. There was no evidence of tetany. Blood calcium and phosphorus levels promptly returned to normal. (Fig. 6). She left the hospital on the seventh postoperative day. We have thus far been unable to get her to return for postoperative studies.

Fig. 2. X-rays of the abdomen before and after retrograde pyelography in Case I, showing the characteristic punctate deposits of calcium in the kidney calyces on each side, the bilateral hydronephrosis and the kinking of each ureter.

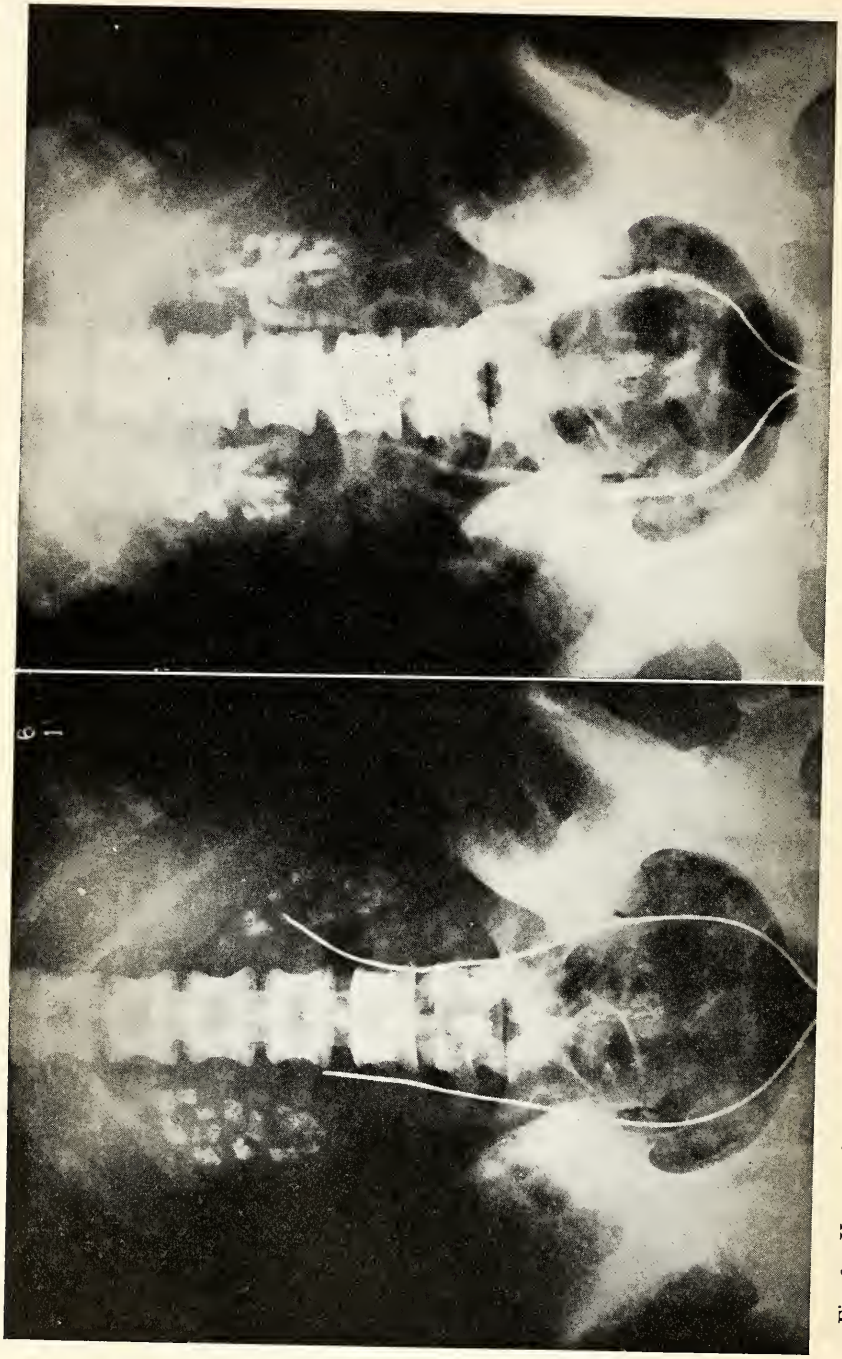

Fig. 3. X-rays of the abdomen before and after retrograde pyelography in Case II showing as in Case I the characteristic punctate deposits of calcium in each kidney calyx.

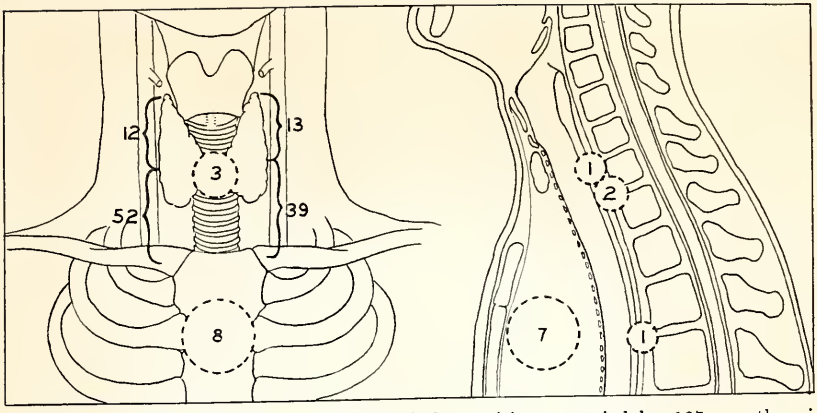

Fig. 4. Diagrammatic representation of the position occupied by 127 parathyroid adenomas from the literature. In addition to those shown seven tumors were within the thyroid gland, fifteen more were only designated as being on the right side, and 22 as being on the left. None of the tumors were found above the superior pole of the thyroid. Most of the tumors were under the lower poles, many extending under the clavicle. One tumor was between trachea and oesophagus while two were between the oesophagus and vertebral column. Eight tumors were retrosternal, one in the posterior and 7 in the anterior mediastinum.

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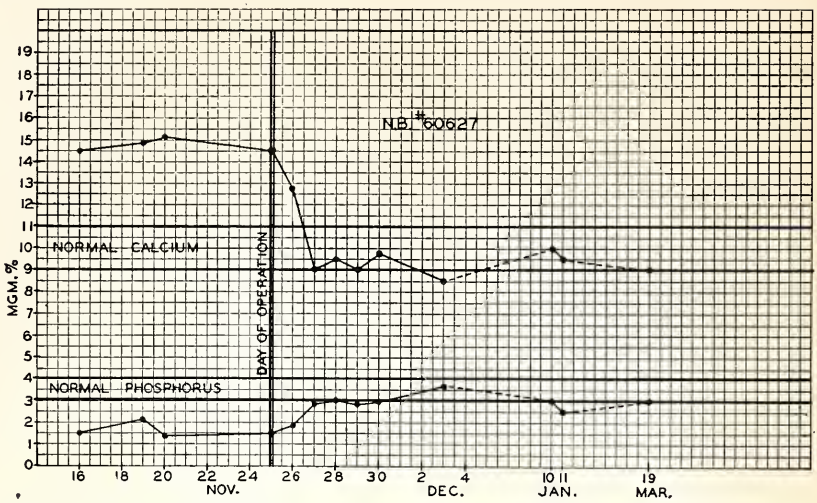

Fig. 5. Graph of the blood calcium and phosphate levels in Case I before and after operation.

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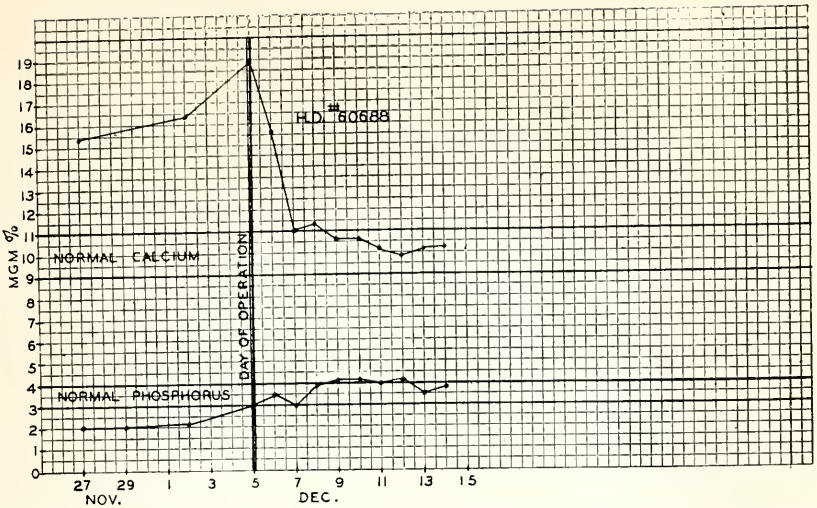

Fig. 6. Graph of the blood calcium and phosphate levels in Case II before and after operation.

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DISCUSSION

Dr. Kirby Farrington: Mr. Chairman and gentlemen: I want to thank Dr. Gardner for his very timely and interesting paper. Timely, because he is opening a field of knowledge. We are just now beginning to learn something. Only since 1925, when Mandl, accidentally, removing transplants which he had made, accidentally discovered the parathoid tumor and removed it, causing almost an immediate cure of a case of von Recklinghausen's disease, when this disease had not been wholly recognized. In the one case I have here, I have had occasion to treat this woman for ten years. She was operated on more than ten years ago for removal of stones from the kidney, and at that time there were eleven stones in one kidney and seven or eight in the other, with multiple kidney abscesses throughout the kidney, and at that time kidney suspension was down.

There is one rather interesting angle you find, which is not mentioned in the literature, not that this disease has any relation at all to hemophilia —this woman had two sons who were hemophiliacs, and I have had the misfortune to operate on one of them only a few weeks ago. Both of them

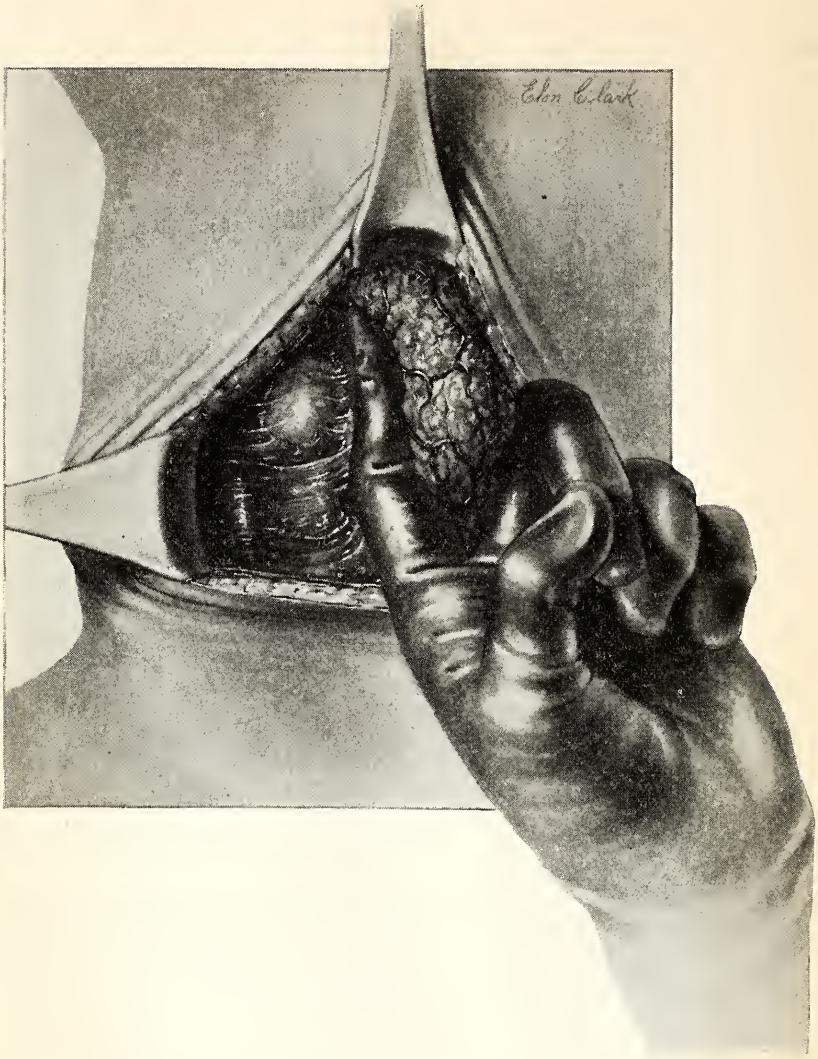

Fig. 7. Drawing of the position of the tumor in Case I from a sketch made at the operation. The tumor was oval in shape, yellowish-brown in color and measured 2x1.8x1.5 cm. in size. It was firm in consistency and was readily palpated in its position under the superior pole of the right lobe of the thyroid occupying a position between the carotid sheath and the larynx.

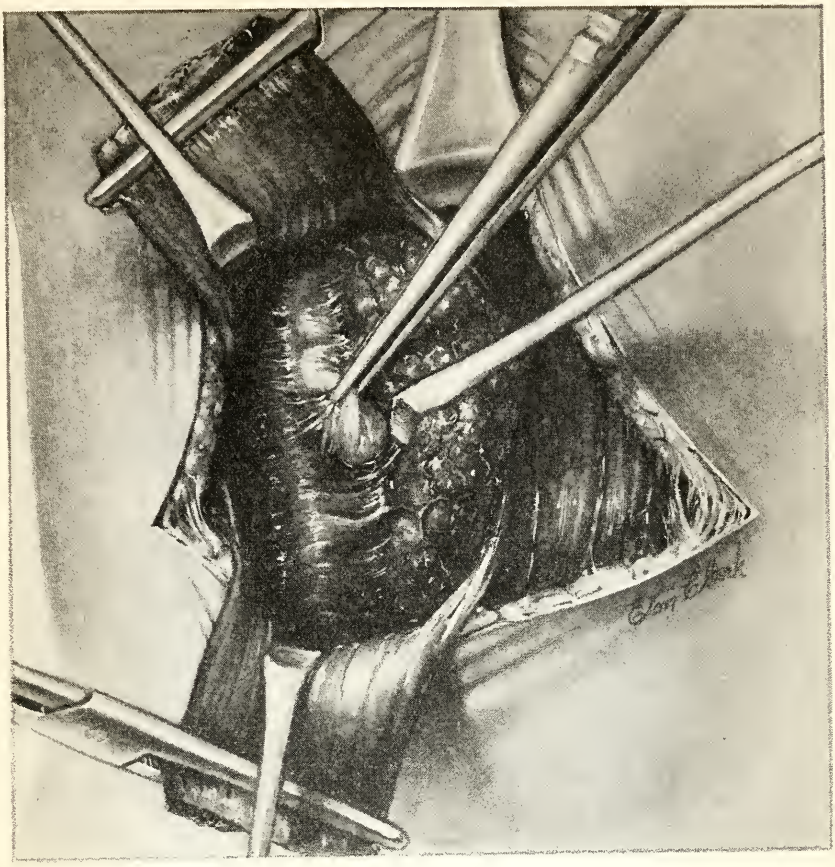

Fig. 8. Drawing of the position of the tumor in Case II from a sketch made at operation. The tumor was of soft consistency and moulded itself into the crevices of its position under the superior pole of the right lobe of the thyroid gland. It could not be felt when the lobe of the thyroid was rolled medially and was only encountered when the branches of the inferior thyroid artery were traced upward. The tumor measured 4x2x1 cm. in size.

are still living. I do not know whether that has any relation to hemophilia or not, but it is certainly something to think about.

I think as we learn more about this very interesting angle noted, we will come to find out that all cases of so-called von Recklinghausen's disease are simply the terminal stage of hyperparathyroidism. Another interesting thing that I have found in searching the literature on this subject is that like Voegel's disease, it practically never occurs in a negro. I do not remember one case in a negro. I have, however, seen a case of genitourinary condition and I think urologists as well might be on the look-out for this condition, probably more than the general surgeon, because symptoms in this disease are very, very slight.

Fuller Albright, who has probably had more experience than any man in America with this disease, has made the very apt statement that the diagnosis is obtained entirely upon the laboratory findings. He says, if your laboratory says hyperparathyroidism, it is, but if the laboratory says no, it's just a pain in the back, and I think that's absolutely true.

This one patient that Dr. Gardner has referred to, suffered a great deal of pain before her operation—pain in all the bones. Since removal of the parathyroid adenoma, this patient has been perfectly comfortable, except when she has passed one small kidney stone, but so far as a generalized pain is concerned, she has been very free from pain.

But I still want to stress, and I think the most important thing in the diagnosis, is that this is the one disease which is practically entirely dependent for diagnosis on a clinical laboratory test.

THE CHAIR: If there is no objection, the courtesies of the floor are extended to all invited guests who are visitors, but not members of the Society.

This paper is open to general discussion now.

If there is no further discussion, we will ask Dr. Gardner to close.

DR. GARDNER: I thank Dr. Farrington for his discussion, and I want to impress again that the disease is of interest to the general practitioner, to the pediatrician because they often appear in their cases, and particularly to the surgeon because he is often called upon to relieve the condition. I believe if we have this in mind, we will possibly find a number of cases. Strange enough, both of our patients have been in the hospital at the same time. They are the only patients that we have had in Duke Hospital, but we too may have had cases. It is true, if one is out looking for cases he will probably find them.

THE SURGICAL TREATMENT OF ENCAPSULATED INTRATHORACIC TUMORS

By JULIAN A. MOORE, Asheville

An apparent increase in the incidence of intrathoracic neoplasms is probably the result of better diagnosis made possible by the more general use of bronchoscopy and radiography. The profession in general maintains a hopeless attitude toward the treatment of tumors within the chest regardless of their kind or location.

Malignant tumors occurring within the thorax are rarely cured by any means at our disposal, although there has been reported the successful removal of a number of malignant neoplasms, including carcinoma of the lung itself. However, not infrequently there do occur primary tumors within the thorax which are quite readily removed by surgical means.

These tumors occur as primary growths, which are usually benign, although some eventually become malignant and invade the surrounding

structures. They are found most frequently in the superior mediastinum, projecting laterally into the right or left thorax, but they may be located in any part of the chest. They are extrapulmonary and usually definitely encapsulated, but they may be densely adherent to the lung or surrounding structures. They cause no harm until their size is sufficient to interfere with the function of the lungs or mediastinal structures, or until they have become malignant and invade other organs. Roentgenographically they are seen as circumscribed, dense areas with sharply defined borders. Pathologically they represent a wide variety of tumors, namely: dermoid cyst, teratoma, neurofibroma, ganglioneuroma, fibroma, myxoma, sarcoma, lipoma, osteo-chondroma, chondroma, hygroma, and xanthoma. The most common types are dermoid cysts and teratoma, followed in frequency by neurofibroma. Tumors such as thymoma, lymphoblastoma and Hodgkin's disease are not included in this list, as they are definitely malignant and invasive from the beginning and are not amenable to surgical removal.

There are no characteristic symptoms or signs of intrathoracic tumors. Many of them are very slow in growth, and produce no symptoms until they become large enough to cause pressure. Frequently they are discovered accidentally. These symptoms depend on the size and situation of the mass, and may be divided into two groups: those due to pressure on surrounding structures, producing interference with function, and those due to inflammatory reactions in the tumor itself or in adjacent organs.

Probably the most common initial symptom is pain, generally intermittent and localized within the chest. It may radiate along the intercostal nerves or down an arm, gradually becoming constant in character. Harrington[1] states that severe pain is much more characteristic of malignant than of benign lesions. Dyspnea on exertion is the next most common symptom. As the tumor grows large enough to produce obstruction to the large veins, the trachea or bronchi, dyspnea becomes more pronounced and is accompanied by cyanosis. Enlargement of the superficial cervical and thoracic veins, accompanied by cyanosis of the face and upper extremities, is characteristic of superior vena caval obstruction.

Cough and expectoration are not marked unless pulmonary infection supervenes. Dermoid cysts have been known to rupture into the trachea or a bronchus. Such an accident is followed by the expectoration of hair and sebaceous material, and is pathognomonic.

Pressure on an intercostal nerve leads to pain along its course, and is erroneously considered as intercostal neuralgia or pleurisy. Pressure on the recurrent laryngeal nerve produces hoarseness; on the sympathetic nerve it may produce a Horner's syndrome; and on the oesophagus it will produce dysphagia.

Bulging of the chest wall is not a common finding, and is more likely to be seen in children. Pleural effusion may be present with benign tumors, but a bloody effusion is characteristic of malignant tumors. Anemia and loss of weight are late signs of malignancy.

Physical examination will reveal abnormal physical signs commensurate with the size and position of the tumor. An abnormal area of dullness with diminished breath sounds and inconstant rales is usually found. If a pleural effusion or pulmonary infection exists, the signs of such complications will entirely overshadow those of the tumor and lead to confusion. The presence of bulging of the chest wall, cyanosis and enlarged veins are rather characteristic of large growths.

The most valuable diagnostic method is the roentgen ray, as the diagnosis of intrathoracic tumors cannot be made without its use. As a matter of fact, many intrathoracic tumors are never suspected until revealed by roentgen ray studies. Stereoscopic and lateral roentgenograms will reveal the presence of a definitely circumscribed area of density, with its relationship to other organs and its exact location within the thorax. Fluoroscopy sometimes establishes the presence or absence of pulsation in the tumor, and is of great aid in differentiating new growths from aneurysms. Roentgenograms after the introduction of artificial pneumothorax give important information about the relationship of the tumor to the lung, and help to distinguish between intra and extrapulmonary tumors. Bronchoscopic examination and roentgenograms after the instillation of iodized oil into the tracheobronchial tree are distinctly useful in the differentiation of intra and extrapulmonary growths.

Intrathoracic tumors must be differentiated from aneurysm first of all. Serological tests and the presence or absence of pulsation within the mass, as revealed by the fluoroscope, will usually distinguish between the two.

Loculated collections of fluid or pus may be very confusing, and aspiration may fail to differentiate between tumor and effusion, as frequently the tumor may be cystic or may be complicated by an effusion or empyema. Sometimes the diagnosis can only be established at operation.

Hydatid cysts occur most frequently within the lung itself. A skin sensitization test may establish the presence of this disease.

Certain malignant growths are radiosensitive, especially Hodkin's disease and lymphoblastoma, and it is wise to submit all patients to a preliminary course of roentgen therapy before operation. If the tumor is radiosensitive, in all probability it is malignant and inoperable. Unfortunately, all malignant tumors are not radiosensitive. Tumors of the group under discussion are not radiosensitive, but this does not mean that all are benign. It is often impossible to differentiate between a benign or malignant tumor except by biopsy. An exploratory operation is always justifiable, particularly when most of the evidence leads one to believe the tumor is resectable.

Since all intrathoracic tumors are potentially malignant, surgical removal of these new growths as soon as they are diagnosed is the only proper treatment. The earlier the tumor is removed, the greater is the chance for complete and successful cure. To wait until the tumor becomes so large as to produce serious disturbances of respiration or circulation

makes the operation extremely hazardous, and greatly lessens the chance of successful removal.

The technical problems encountered are important, and should be carefully considered. The chief danger of the operation is the effects of a large, open pneumothorax. With the pleura widely opened, there is a rapid loss of body heat. Therefore, no time should be wasted, and the operation should be completed as rapidly as is consistent with good surgery. Cardiac and respiratory embarrassment due to mediastinal flutter can be avoided by using differential pressure anesthesia given intratracheally. This is the only type of anesthesia that should be considered. Part of the ill effects of a sudden, large pneumothorax can be avoided by the establishment of artificial pneumothorax several days before operation.

The surgical approach to the tumor must be through the bony thoracic wall. Tumors in the anterior and superior mediastinum are approached through some type of anterior mediastinotomy. The costal cartilages are resected, and the sternum divided horizontally or split vertically. Tumors in the lateral portion of the chest are best approached through an intercostal incision directly over the tumor. For tumors located in the posterior mediastinum or upper portion of the chest, a postero-lateral incision with resection of one rib and division of one or more ribs and a wide opening of the pleura offers the best approach. Harrington[2] prefers the postero-lateral transpleural approach in nearly all types and locations. He further states that an extrapleural approach is usually not practical or satisfactory, as the pleura will be opened in any event. A large denuded area is left which is more likely to become infected, or which may cause large and troublesome postoperative effusions.

Careful dissection of the tumor from surrounding structures is essential. Injuries to the lung can easily be repaired, but injuries to mediastinal structures are more likely to be fatal. After removal of the tumor, hemostasis must be complete. The pleural cavity should be irrigated with warm normal saline solution. The opening into the pleura should be closed tightly, and just before the last stitch is placed in the pleura the lung should be expanded. The ribs that have been divided should be sutured together, and the soft tissues closed layer by layer.

There is a justifiable difference of opinion as to whether the pleural cavity should be drained or not. Harrington[2] states that it should only be drained in the presence of infection. On the other hand, cases have been reported as having died from extensive subcutaneous and mediastinal emphysema following operation. Whenever there has been injury to the lung or the pleural defect cannot be successfully closed, I believe a small rubber tube inserted through a stab wound between the ribs and its outer end placed under water will safeguard against this occasionally fatal complication. It need not be left in more than twenty-four hours, and I do not believe it greatly increases the risk of infection.

Strict attention to details in the treatment during the postoperative

course is absolutely essential to a successful outcome. Shock should be combatted with intravenous injections of glucose solutions, 6% acacia solutions, or blood transfusions. Blood pressure should be maintained. It is wise to have a donar available at the time of operation.

Respiratory and circulatory embarrassment are best relieved by placing the patient under an oxygen tent and keeping him there until entirely relieved. Cardiac failure, of course, calls for stimulation as indicated. Pleural effusions that embarrass respiration should be aspirated as often as necessary. Tension pneumothorax is best relieved by inserting a small tube between the ribs and placing the outer end under water. Infection of the pleural cavity should be drained by either an intercostal tube or rib resection.

SUMMARY

1. The occurrence of encapsulated intrathoracic new growths is not rare.

2. Many of these tumors are benign, but most of them are potentially malignant.

3. All of them should be removed as soon as diagnosed.

4. Two tumors, one ganglioneuroma and one endothelioma of the pleura have been successfully removed by me, and previously reported by me.[3]

5. Some of the technical problems connected with the surgical removal of intrathoracic new growths are discussed. Many of these problems have been overcome, and surgical removal of tumors of the chest, is not a very hazardous procedure.

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Dr. Moore: I present these two pictures in illustration of two cases in point, merely to call your attention to the occasional occurrence of these tumors, and to show you that they can be successfuly removed, and espcially if they be removed as soon as diagnosis is made, because anyone knows that they will become malignant.

DISCUSSION

Dr. S. M. Bittinger: I think we should certainly congratulate Dr. Moore on the presentation of these two interesting cases. While he says they are rare, they are still not uncommon; and also for his very able handling of the problem. I think he emphasized what he has said, that with tumors often times there are very few symptoms that these patients

present. Neither of these two patients, especially the first one, had any symptoms except a slight pain in the upper part of the chest, diagnosed by Dr. Bronson, X-ray specialist. The other case he said had some pain, but it certainly sounded like respiratory indication rather than a tumor. It is certainly necessary to establish your diagnosis of a tumor. Sometimes it is difficult to determine the nature of the pathology or type of tumor, except by operation. But it is certainly necessary to make a diagnosis in order to remove the tumor before it has become very large and causes definite pressure symptoms, and some of them may become malignant.

Relatively speaking, and on the other side of the picture, they are very definitely dangerous to life.

Both of these cases were certainly very interesting to us at the Sanatorium, and we feel that the first one after getting a great deal of consultation—was possibly gangrenous. Whether it was encapsulated fluid, or whether it was gangrenous would show, or some other condition. And the pathological study after the operative removal cleared up the diagnosis. I certainly thank Dr. Moore.

Dr. Moore: Mr. President, there is nothing more I have to add. I thank Dr. Bittinger for his remarks. The correctness of their diagnosis at the Sanatorium was the reason these two got operated on as early as they did.

The Chair recognized Dr. W. P. Herbert, who made the following announcement:

Dr. Herbert: Colonel Wagner of Oteen would be glad to have anyone visit the hospital.

The Chair: We are particularly fortunate in having with us our next speaker, an invited guest. I will ask Dr. Donnell B. Cobb of Goldsboro to present him to you.

Dr. Donnell Cobb: Mr. Chairman and gentlemen: Our next speaker is known to many of you, especially by reputation. He comes from the University which has already taken a leading part in our medical education, and which has more than two hundred and fifty alumni practicing in our State. Having known him since his interne days, it has been with a personal interest that I have followed his achievements, and have watched his certain and rapid advancement, and as a visitor to his clinics, I have been impressed with his originality of thought, his certainty of purpose, and his definiteness of harboring knowledge. As head of the Surgical section of the University of Pennsylvania, he is largely responsible for Devens surgery, and made thes delightful treaties known to us all, his experiences and impressions covering almost the entire field of surgery. He will talk to us on a subject to which he has given much research. My friend, Dr. I. S. Ravin.

CERTAIN ASPECTS OF GALLBLADDER DISEASE

By Dr. I. S. Ravin, Philadelphia, Pa.

(Note: Dr. Ravin took his paper away with him, promising to send it in himself after a few additions to it. He has not done so.—M. F. J., Reporter.)

The Chair: This paper is not open for discussion, but any questions you wish to ask Dr. Ravin he will be glad to answer.

Dr. Brenizer: Dr. Ravin, you spoke of not draining. Even when that is done, and the drain is put in, I have found that there was an appreciable amount of bile drained there in just a very short length of time?

Dr. Ravin: Dr. Brenizer has asked why it is that bile drains from a tube which has been placed . . . just beneath the kidney. There are several reasons for this. The first is anatomical dissections will frequently show small bile ducts coming from the liver, either to the cystic duct to the neck of the gall bladder or the right hepatic duct. We have one instance in which a right hepatic duct entered into the gall bladder. . . Secondly, there are numerous biliary sinuses in the gall bladder bed, from which bile may leak for some time, and the leakage of bile into the peritoneum will result in bile peritonitis—first a chemical peritonitis and later peritonitis from infection, when I should say to the man who has elected operation on the biliary tract, I should think that that was sufficient reason for inducing a small safety valve in these places.

Dr. Brenizer: You are concluding that all colacystectomy's should be drained?

Dr. Ravin: I would say that about five years ago we went through the period of time without drainage, and then in a period of five months after we had one instance of a true colacystectomy with death. If you provide for a double drainage that patient will get well.

The Chair: Dr. Ravin, I would like to ask you one thing. I would appreciate your explaining more thoroughly the administration of glucose preoperative, in the care of the patient.

Dr. Ravin: Dr. Sweaney has asked about the administration of glucose. A few years ago we used—say about 10% of glucose. Somebody asked why we did not feed those patients a glucose diet. We put a patient on a carbohydrate diet as soon as he is admitted in the hospital wards. We reinforce this with at least a thousand cc. of 5% glucose in saline solution every day by continuous intravenous drip, in such a position that the glucose is taken care of, and is not lost in the urine, and you will find that from forty to fifty per cent of the injected glucose is run out in the liver. The amount you get with the solution may not take up any more glucose. I cannot say definitely that you can increase that amount in a human patient, but you cannot definitely increase it in the dog. I have reason to say the same thing may be true as to humans.

The jaundiced patient I think presents a necessarily surgical problem. It was shown in the Belvue Hospital, New York, that the patients operated on in New York for jaundice in proportion was ten per cent. . . Our treatment is usually to provide from five to seven days for that treatment and even wait longer until it has reached its maximum, or has decreased to the minimum. Then, going up or coming down, we delay operation until we are satisfied that it can be done. Those patients then present a better surgical risk.

Replying to Question from the Floor: Can you increase the amount of glycogen in the liver? I can only answer that by my observation in a dog. . . We have not been able to notice whether it increased the liver glycogen in the patient. I cannot answer.

THE CHAIR: Any further questions?

I would like to have the report of the Nominating Committee: Drs. E. S. Bullock, Foy Roberson and R. O. Lyday.

DR. ROBERSON: The Nominating Committee nominates for Chairman of the Surgical Section Dr. J. D. Highsmith of Fayetteville, and moves the nomination be accepted.

Motion seconded from the floor.

Carried unanimously.

THE CHAIR: The fifth paper on this program was read before the first General Session. It will now be read by title only:

"Surgical Significance of Meckel's Diverticulum with Particular Reference to the Occurrence of Peptic Ulcer." By Dr. Donnell B. Cobb of Goldsboro.

Dr. Sweaney, the Chairman, leaves to take Dr. Ravin to Greensboro, and Dr. W. B. McCutcheon takes the Chair at his request.

THE CHAIR: The next paper on the program is that of Dr. O. L. Miller of Charlotte.

APPARENT INDICATIONS FOR LUMBOSACRAL FUSION IN LOW BACK DISORDERS

By O. L. MILLER, M.D., Charlotte

Due to constantly improving X-ray technique and clinical studies, some orderly understanding of low back pathology is emerging in spite of the complexity of the subject.

It appears that some type of inherent, congenital weakness or anomaly in the osseous structures of the lumbrosacral area is the underlying cause of a majority of low back derangements. These defects may be present and give no symptoms nor concern in a young person whose muscles are in

good tone and whose epiphyses are immature or have recently matured but may contribute to disabilities found principally in middle or later life.

During recent years, evidently due to our great industrial expansion and the introduction of the automobile, our cases of back injuries and complaints have become serious clinical and medico-legal problems.

Diagnosis in low back injuries is difficult even under the most favorable conditions and this difficulty in making a satisfactory diagnosis has led in many instances to a suspicion that no real pathology was present and that malingering was at the bottom of the complaint. While the latter is probably true in a certain per cent of cases, such a conclusion should not be arrived at without careful examination and the elimination of all possible causative factors of true back disorders. We can quite easily be unfair in calling a patient a malingerer when some vague low back pathology is really present.

The two regions most often affected in low back injuries, or in chronic back complaints of other kinds, are the lumbrosacral and sacro-iliac joints. Both these regions may be the seat of pathology, the result of many different contributing causes. There is no positive differentiation, by physical examination, between lumbosacral anomalies and so-called sacro-iliac strain. The results of surgical treatment indicate that when there is no definite sacro-iliac abnormality visible in the X-ray film, the lumbosacral rather than the sacro-iliac joints must be suspected as the source of symptoms.

George, of Boston, stated that 35% of all spines X-rayed in his laboratory for any purpose showed congenital abnormalities in the lumbosacral region. Our problem is to know the normal, or the approximate normal, in the low back and to arrive at some consistent clinical and X-ray findings in studies on patients presenting themselves for examinations of complaints in this area.

LUMBOSACRAL STRAIN AND ASSOCIATED ANOMALIES

The normal lumbosacral area is difficult to define. The best classification of the area is to consider it mechanically sound or unsound, stable or unstable. The stability of the lumbosacral area depends largely on the lumbosacral arch articulations. The most stable backs obtain when the facets are those described by anatomists as the normal. They are called by Ferguson, roentgenologist of the New York Orthopedic Hospital, the internal-external type. Normal joints are in the sagittal plane and in an anteroposterior roentgenogram they are well defined. One seems to be looking directly into them. The lumbosacral facets vary from the apparently secure, well-wedged normal type just described to the apparently insecure or transverse type. Instability of the spine may be contributed to by the presence of bilateral anteroposterior facets or unilateral facets—one normal internal-external and one anteroposterior. These latter are considered to be the worst type of facets as any undue strain must put

disturbing stress on one or the other of these joints since they do not operate in the same plane. Some significance must then be attached to the finding of abnormal facets between the lumbar spine and the sacrum. The hope of maintaining or recovering muscular compensation in the presence of these anomalies is uncertain.

SACRAL INCLINATION

An unstable lumbosacral junction may be found alone or associated with some other anomaly. In some cases the center of gravity, as calculated to fall along a line through the center of the 3rd lumbar vertebra, passes anterior to the sacrum, sometimes as much as two inches. Just in proportion as this line falls anterior to the sacrum is the weight not borne by superimposed bone, but is sustained to a degree by muscles and ligaments, and this is conducive to strain. The normal adult sacral angle has been estimated to be thirty-eight degrees. According to Ferguson, when this angle is forty-two degrees the stresses are a menace, and when the angle is above fifty degrees the stresses are severe. As the sacral angle increases, the stresses at the lumbosacral joint increase. The phenomenon of an increased sacral angle is rather constant in chronic back strain and some interpretation must be placed on this finding.

PRESPONDYLOLISTHESIS

Prespondylolisthesis is a defect in the lamina at or near its junction with the pedicle. It is a failure of union between the anterior and posterior elements of a vertebra. The condition is fairly common. It is not always attended with symptoms of decompensation but is a potentiality of acute traumatic instability at any time. Prespondylolisthesis is usually visible in a lateral X-ray film, may be seen in an anteroposterior view but is best outlined in a forty-five degree view of the lumbosacral area.

SPONDYLOLISTHESIS

Spondylolisthesis is the dislocation forward of a lumbar vertebra. This displacement usually follows already existing prespondylolisthesis. From any ordinary trauma to the low back, the body of a lumbar vertebra with insecure fastenings to its neural arch may slide forward in varying degrees on the one below. This is most frequently observed at the fifth lumbar vertebra. Cases of spondylolisthesis have been observed without any history of trauma.

The diagnosis of spondylolisthesis is best made by means of a clear lateral X-ray film of the lumbosacral area. Clinically, lumbar lordosis is exaggerated. There is prominence of the spine of the fifth lumbar vertebra and a depression may be felt just above it. When spondylolisthesis does exist the back is subject to continuous strain and is unfit for heavy duty unless the spine is surgically fused bridging this defect. Belts and braces may be used as protecting supports but are not curative.

TRANSITIONAL VERTEBRA

One of the common anomalies is the transitional vertebra. It partakes of the characteristics of a lumbar and sacral vertebra and is sometimes termed the sixth lumbar vertebra or the first sacral. The transitional formation may be present on one or both sides in any degree from slight enlargement of the transverse process to pseudarthrosis or fusion of the transverse process to the sacral wing. When this anomaly is symptomatic, radiation of pain may be bilateral or unilateral. Pain may occur on the side of or opposite to the anomaly, if the anomaly is unilateral. This usually means that variations in the lumbosacral facets are a part of the picture of instability and play a part in the symptom syndrome. If the pseudarthrosis develops into a chronic traumatic arthritis, the false joint should either be resected or the entire lumbosacral junction fused. An X-ray taken at a forty-five degree angle will demonstrate whether or not a transverse process contacts laterally. A flat anteroposterior view is not truly diagnostic in this respect, as the parts may overlie instead of impinge.

IMPINGING SPINOUS PROCESSES

One will occasionally see impinging spinous processes give rise to pain. In such cases there develops a bursal mass of fibrous tissues between the posterior tips of the spines. Chronic irritation and contusion gradually develop and varying degrees of disturbance and pain follow. I have seen a number of these cases and have operated on four with complete relief of symptoms. The operation is free resection of contacting points between the adjacent spines.

POSTERIOR DISPLACEMENT

Posterior displacement of the fifth lumbar vertebra on the sacrum sometimes occurs. On hyperextension of the spine in the presence of undue mobility of the fifth lumbar vertebra the body rides backward, and on flexion instead of gliding forward again it may merely tilt on the posterior margin of the sacrum. The diagnosis can only be made by absolutely accurate lateral X-ray films. Some students consider posterior displacement of the fifth lumbar vertebra one of the commonest of the significant lumbosacral anomalies and one very often associated with symptoms. The backward displacement of the fifth lumbar vertebra may be reduced by hyperextension followed by gradual flexion of the spine while traction is exerted on the pelvis. However only surgical fusion of the area will control this condition after it becomes a chronic disturbance since the faulty mechanics allowing undue motion of the fifth lumbar vertebra still exists.

SPINA BIFIDA OCCULTA

Spina bifida occulta is observed at intervals in X-ray examination of the low spine. It is not thought to have much significance as compared with other anomalies mentioned where definite weight bearing occurs. In spina bifida occulta there is absence of bone along the neural arch where

ordinarily some supporting spinal ligaments are attached and hence some weakness exists at the site, but it is not the usual source of backache.

Fractures in the low back occurring frequently, and giving inexplainable chronicity are the fine cracks through articular facets, through the pedicles and laminae, particularly of the fifth lumbar vertebra. This is why alertness should be emphasized in examinations of acute low back sprains. To locate these fractures the best of X-ray detail is required and often the use of stereoscopic films. Finding these isolated fractures, the patient should be hospitalized and his back immobilized in a snug-fitting spica jacket. This protection should be continued in the same spirit with which one would treat a fractured femur. To strap such a back and let the patient go along starts the first stage of chronic and intractable back complaint which may never be relieved or if relieved only at the expense of later surgical fusion.

FUSION OPERATIONS

Lumbosacral and sacro-iliac fusion operations are rather exacting surgical procedures and the patient should be made to appreciate this fact before such surgery is undertaken. When a diagnosis is made, which in the surgeon's opinion may be leading up to proposed surgical fusion of joints in the low back, it is well to try various so-called conservative measures in treatment before asking the subject to submit to operation. Under conservative management certain unexplainable recovery may ensue, giving the patient relief, thereby permitting him to forego the ordeal of a major operation.

If on the other hand, after a reasonable period of protection of a painful low back by means of jackets, braces, etc., no reasonable relief has been experienced and all X-ray and clinical evidence continues to point to a defect ordinarily amenable to surgery, then such surgery should be resorted to in spite of its apparent exactitudes and the six to twelve months of time necessarily devoted to convalescence.

The series of cases in which I have done lumbosacral or sacro-iliac fusions is reported as my experience with this surgery. In the light of results to date my personal feeling is that we have been somewhat too conservative in our attitude toward offering these fusion operations.

There is, however, the feeling in certain quarters that, in some parts of the country, this surgery has been too freely resorted to. Most of the large insurance companies, and industrial commissions in some states, have concluded that poor and costly surgical results have been rather commonly seen after low back operations.

In spite of this it is well known, and well taught in some centers, that surgical fusion is indicated in the presence of certain definitely demonstrated low back pathology, and we must assume that any disfavor with which the operative work is viewed results from, either doing the surgery where it was not indicated, ineffectively as to technique, or possibly to both.

I do know that we have patients in private practice benefitting greatly from surgery on the low back. They experience the discomfort and inconvenience necessarily attending it, pay the cost, and evaluate it fairly. They have no financial or psychological reason to do otherwise. If, then, we see the same pathology in compensation cases, do the same operation for its relief and carry out similar convalescent care, we should expect proportionately the same end-results. In our surgical work we must interpret for insurance companies the clinical results, since they pay for much of it under compensation laws, and recommend it in cases where it seems indicated. We must interpret to Industrial Commissioners our end-results, realizing that every case is a law unto itself, but at the same time recognizing that all things beings tentatively equal the surgeon should expect the same end-results in a given case whether done with or without benefit of compensation. Our best yardstick then for rating disability after operated low-back injuries is our conclusion arrived at on cases handled in private practice rather than under compensation where some psychological influences, it seems, must be reckoned with.

No effect has been attempted here to outline the detail of surgical technique in fusion operation, since that may be found in any modern textbook on Orthopaedic Surgery and in other references. It has been my experience that these patients need eight to ten weks in recumbency following operation and are best splinted by means of plaster spica jackets. The low back should be protected by a jacket when the patient becomes ambulatory and this will ordinarily be worn for four to six months, after which a snug-fitting belt should give ample protection. The patients do not seem to appreciate maximum benefits from operation until a year and a half after procedure has been carried out. By this time strong bony consolidation should have taken place, if the fusion has been complete, and compensation for the original defect with a stronger, more serviceable back will be appreciated.

Patients having operation between 1928-1935:

Males	7
Females	14
Total	21

Age of patients:

Youngest	19
Oldest	43
Average age	29

Diagnosis:

Chronic lumbosacral strain	7
Spondylolisthesis	3
Prespondylolisthesis with back strain	1
Unstable 5th lumbar with associated fractures	8
Sacro-iliac derangement	2
Total	21

Chief symptoms:

Chronic low back pain	14
Pain in low back and sciatica	7
Total	21

Type of operation:

Lumbosacral fusion	18
Sacro-illiac fusion	3
Total	21

Results:

Able to carry on former occupation with comfort	14
Decidedly improved	7
Total	21

Conclusion: Pain, instability and disability at the lumbosacral junction not relieved by conservative treatment, such as a period of rest in bed on a firm mattress followed by protecting jackets and physiotherapy or, if relieved by these measures, found to recur on minor provocation, should have an operation for lumbosacral fusion.

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URETEROTOMY FOR OBSTRUCTING URETERAL STONE WITH ANALYSIS OF SIXTY-TWO CASES

E. S. Boice, M.D., F.A.C.S., Rocky Mount, N. C.

This paper is based upon the operative and cystoscopic records of Dr. B. C. Willis, Dr. N. P. Battle and the writer, and the cystoscopic records of Dr. H. L. Large, and covers briefly experiences with 195 patients with ureteral stone who have been admitted to the Park View Hospital during the past 22 years. A few office patients who were not hospitalized because their calculi passed following a diagnostic catheterization of the ureter or some minor procedure such as clipping the ureteral orifice are not included. Patients whose ureters were found, at operation, to be blocked by stones in the kidney pelvis are excluded also, though in several instances such stones were probably in the ureter when the patients were first seen but were pushed up into the pelvis by the ureteral catheter.

One hundred and thirty patients were given the chance to pass their calculi with the help of the various methods of cystoscopic manipulation, most often by the use of catheters and filiforms. Of these only thirty-five passed their stones in the hospital or are known to have passed them subsequently.

Ninety-five, after being allowed to leave following the initial or a later dilatation, failed to return for further treatment for various reasons, usually either because their symptoms were relieved or because they feared a repetition of a previous painful and disabling reaction. Undoubtedly some of these patients passed their calculi, but we have no means of knowing how many.

Of the 62 patients subjected to ureterotomy, only 3 were colored although around 30% of the total hospital admissions have been negroes. Twenty-five patients were males and 36 females. The youngest was 12 years of age, the oldest 65. Seven were in the second decade, 15 in the third, 19 in the fourth, 15 in the fifth, 4 in the sixth, and only 2 were over 60. There were no bilateral ureteral stones but calculi were found in the opposite kidney in 7 instances.

Seven patients stated their symptoms had been more or less persistent with occasional or frequent colic for about a year, 4 for two years, 15 for from two to ten years and 8 for as much as ten or fifteen years or more. The remainder had suffered colics over varying periods up to one year. In only two instances had the attack leading up to admission lasted less than two days. Many patients had suffered almost constantly for from two to seven days or more in spite of repeated hypodermics of morphine, apparently no thought having been given to what might be causing the colic or to the serious damage to which the kidney was being subjected. The majority of the cases may well be classed as emergencies in that the kidney was either completely or partially blocked, with kidney function already suppressed or rapidly becoming so and, in most instances, with advanced associated infection. In 39 instances blockage was complete as nearly as we could tell. In 21 of these the ureteral catheter either dislodged the stone or passed by it, giving temporary relief, but in 18 cases it was impossible either to push the stone up or to get a catheter by it.

In almost every instance at least one ureteral catheterization was done to determine the size and condition of the ureter, the location of the stone, whether it could be dislodged or a catheter gotten by it, and such other information as would be helpful in determining the amount of kidney damage and the best method of relieving the situation. Of course, the X-rays were used in conjunction with ureteral catheterization, but retrograde pyelograms were not often made and only if a catheter could be passed beyond the stone, assuring a free return flow. More recently, if indicated, pyelograms and ureterograms have been made by the intravenous method, using uroselectan. In a number of cases repeated unsuccessful attempts to get the stone by cystoscopic manipulation were made before operation was finally resorted to. However, after seeing several violent reactions with severe infection, chills and high fever, we have grown considerably less enthusiastic over this procedure except for patients with ample ureters and small stones. With increasing experience in both methods we have come to feel very definitely that prompt surgical removal of stones which are

not readily passed is the more conservative procedure better calculated to conserve kidney function and to avoid or minimize intractable infection. Obviously, aside from the presence or absence of ureteral inflammation with its edema and deforming effects, the shape of the calculus and its size in relation to that of the lumen of the ureter are factors in determining whether or not a stone can pass safely. Twenty-six of the stones in this series were noted as being between 0.5 and 1.0 cm. in diameter, while 21 were from 1.0 cm. up to 2.0 cm. in diameter. The size of the remainder was not definitely stated. Many were angulated and rough thus favoring impaction. In a number of instances, judging from the X-ray shadow alone, the stones looked as though they should pass, at least with the help of dilatation and manipulation. Some of these were found to be firmly impacted in abnormally small, often inflamed, ureters, while others were immovably caught by sharp angles or projecting spicules. Some of the worst blockages were caused by these small stones. In such instances, especially if the calculus was up near the kidney, operative removal seemed preferable to the difficulties, dangers and uncertainties incident to the manipulations needed to work the stone down the ureter. A case in point was that of a 200-pound man who was admitted acutely ill after two days of severe colic with a small stone blocking the ureter a few cm. below the kidney pelvis. This man's ureter was so small that nothing larger than a filiform would pass and this failed to overcome the block. Even when all edema had subsided some weeks after operation it was never possible to pass a catheter larger than a No. 5 up either ureter.

Another illustrative case was that of a woman with a small ovoid stone just above the bladder which, from the X-ray film, looked as though it should pass. However, it had been in this same position some months earlier, at which time a capable urologist in another clinic had been unable to dislodge it. We removed it extraperitoneally at the close of a pelvic laparotomy, finding it covered with spicules and firmly embedded in the wall of the ureter.

In many cases the size of the stone clearly indicated that passage was not possible at all or highly improbable even after the utmost we could expect from dilatation and manipulation. Often these patients were acutely ill from complete or nearly complete blockage with every evidence of spreading infection and severe kidney damage as indicated by chills, fever, leukocytosis, urea retention, etc. Of course, if a catheter could be passed by the obstruction and the kidney drained, advantage was taken of this opportunity to institute reparative measures until the infection had quieted down and there was at least some restoration of kidney function. However, when such a patient had been brought to as favorable a condition as possible, it is our practice to remove the stone by ureterotomy rather than risk the damaging effects of a probable further partial or complete block incident to manipulative measures. In operating upon this type of case we feel that it is often a distinct advantage to make no attempt to close the ureteral wound, thus insuring adequate kidney drainage.

A case illustrating these principles was that of a fat, flabby, poorly preserved woman 56 years of age with a history of kidney colic for 18 years. She was admitted in a desperate condition following three days of severe kidney pain along with fever, nausea and vomiting. Her leukocyte count was 42,600 with 90% polys. The blood urea was 98 mgs. She was stuporous and for the first three days her temperature ranged between 102 and 105½. The blood culture was negative. X-ray showed a stone 1.0 cm. in diameter in the lower right ureter. A catheter was passed beyond the stone with release of pus laden urine. Catheter drainage was kept up and she was given large amounts of glucose and Ringer's solution intravenously. On the tenth day her urea was down to 40 mg. and her leukocyte count was 11,000. Her temperature had not been above 101 for six days. The urine from the right kidney showed a 5% phthalein output in one hour, with a specific gravity of 1.002. The output from the left kidney was 42%, the specific gravity 1.016. Following the removal of the stone through a McBurney incision there was a rise of temperature to 104 once with a gradual fall to normal before her discharge on the 17th postoperative day. Some months later when she voluntarily discontinued her return trips for treatment the urine from the right kidney still contained quantities of pus. This woman's pyelogram showed a large hydronephrosis and hydro-ureter, which, especially in view of the infection present, clearly indicated a nephrectomy but she declined to submit to it.

Two other patients in this series underwent nephrectomy because of infected almost functionless hydronephrotic kidneys secondary to obstructing stone in the lower end of the ureter. One was done as a primary procedure, the other two weeks after the ureteral block was relieved by removal of the stone.

Frequently a nervous hypersensitive patient simply won't tolerate repeated cystoscopic maneuvers. Again, prompt ureterotomy may prove the quickest and least disabling way to get a working man back on his job. Twenty-one patients in this series were out of the hospital with healed wounds in from nine to fifteen days after operation. At times bladder inflammations and various difficulties secondary to stricture, prostatic hypertrophy, etc., may be deciding factors against manipulative procedures. Only recently a man 63 years of age was admitted with kidney colic of seven days duration. Shortly after admission he had a chill with fever 103, and was definitely toxic. X-ray showed a small stone in the pelvic portion of the left ureter. Because of prostatic hypertrophy and advanced cystitis cystoscopy was possible only under caudal anesthesia. Ureteral catheterization was difficult and a small ureter hugged the catheter closely, but it was possible to get by the stone and so afford temporary relief by aspirating almost pure pus from the kidney pelvis. Had this patient been a female with a ureter which seemed dilatable, we might have attempted manipulation. As it was, after 24 hours drainage through the ureteral catheter and the intravenous use of 2,000 c.c. of 10% glucose solution, an irregular

stone 7x10 mm. was removed through a McBurney incision. The ureteral wound was left open to insure continued kidney drainage, and post-operative fluids by mouth and vein were pushed. Convalescence was rapid and the patient was discharged with healed wound on the tenth day.

An infrequent but definite contra-indication to attempts at manipulative removal is the occurrence of blockage of the remaining kidney in a patient who has already undergone nephrectomy. Such a patient was admitted in a stuporous condition from anuria of 35 hours duration, with a small stone so firmly impacted at the pelvic brim that the catheter could neither dislodge nor get by it. Immediate operation under spinal anesthesia was done, using a McBurney incision. The stone was readily located but was disloged during mobilization of the ureter and shot upward out of reach in the dilated proximal ureter. Since the block was thus relieved the wound was promptly closed and a catheter was passed to the kidney to prevent a recurrence of obstruction and to permit recovery of kidney function. Later, when the catheter was removed, the stone promply slipped down and again lodged at its previous site from which it was easily removed through the reopened original incision, care being taken on this occasion to occlude the dilated upper ureter before attacking the stone.

The majority of the stones were found in the lower ureter, 29 being in the lower pelvic portion and 8 in the upper pelvis or in the neighborhood of the pelvic brim. Three were in the middle third and the remaining 22 in the upper third, usually within a few cm. of the uretero-pelvic junction. The operative approach to the stone was through an ordinary McBurney type incision or some modification of it in 33 instances. The usual kidney incision was used 17 times, a low median incision 9 times and a high rectus once. The Foley[1] incision was used only twice, but it is certainly a distinct advance in approaching the upper ureter and should largely replace the kidney incision for this purpose.

The peritoneum was opened deliberately in line with the abdominal incision in 17 instances, 6 times for removal of the appendix and twice for pelvic work. In nine instances it was opened solely to facilitate location of the stone and mobilization of the ureter. The use of this procedure and keeping in mind the anatomical attachment of the ureter to the peritoneum often proved very helpful in obviating unnecessarily extensive retroperitoneal dissection. Of course, this peritoneal incision was securely sutured and packed off before the ureter was opened.

In some cases the ureteral catheter was used to push a low pelvic stone up to a more accessible location, the catheter being left in the ureter to help prevent a shift in position of the stone. In almost all cases, but especially in these dislodged stones, a final check-up X-ray was made on the way to the operating room to detect a possible change in position of the calculus. When possible the ureteral incision was made a little above an impacted stone so as to keep the scar away from already inflamed tissues, thus lessening the chance for later stricture. The ureteral incision

was sutured in only 22 cases and a number of these drained urine. In 40 cases no closure of the ureter was attempted though sometimes the peri-ureteral fat was brought together. Some of these unsutured ureters did not drain urine. Certainly it is desirable that a relatively normal ureter be sutured, but if an edematous, friable and inflamed ureter is left unsutured we feel that better kidney drainage is secured and less damage done to the ureter itself. In every instance urine leakage had stopped before time for dismissal from the hospital, though one wound reopened later for a short time. All wounds were drained with one or two pieces of penrose tubing. We have tried to follow every case with appropriate cystoscopic and other treatment, hoping to rid the urine of pus and to be sure that the ureter was free of constriction, but too often the patient lost interest when the active symptoms were relieved and failed to return.

Considering the number of blocked and infected ureters in this series it is not surprising that 39 patients ran a temperature of 100 or over before operation. In 11 of these the temperature ranged between 101 and 103, and in 20 it was 103 or over. The post-operative temperature of 23 patients did not reach 101, while of the 39 whose post-operative temperature was 101 or more only had 11 had fever of 103 or above as contrasted with 20 whose fever was 103 or above before operation.

There were two deaths in this series. The first case, Mrs. C. C., age 36, was in the sixth month of pregnancy. Her first kidney colic dated back 12 years. The last began two days before admission and was associated with marked nausea and vomiting. Her temperature was 103, pulse 150. The leukocyte count was 12,000 with 85% polys. The red blood count was 3,700,000 with hemoglobin 50%. The blood urea was 20 mgs. The specific gravity of the urine was 1.015, there was a trace of albumen and an occasional pus cell. X-ray showed a stone about 0.5 cm. in diameter in the lower pelvic right ureter which the ureteral catheter could not dislodge or get by. The stone was removed through a muscle splitting incision, much difficulty with hemorrhage being met due to the dilated pelvic veins. Considerable bloody urine under tension was found in the ureter above the stone. The day after operation the patient miscarried. She continued to run a septic temperature up to 106 until her death on the ninth post-operative day. Three different blood cultures all showed streptococcus hemolyticus. During her illness she received two blood transfusions and large quantities of glucose in Ringer's solution intravenously. Looking back on this case the question arises whether or not she might have survived if a nephrostomy or pyelostomy had been done, leaving the stone to be removed at a later date.

The second fatal case, Mr. J. H. A., age 43, had suffered frequent kidney colics for five years. The attack in which he was admitted had been severe for three days in spite of eight hypodermics of morphine, "some amytal" and several administrations of chloroform. The admission temperature was 100, pulse 99. The leukocyte count was 9,800 with 82%

polys. The urine showed a specific gravity of 1.030. There was a trace of albumen and ten pus cells to the low power field. The blood urea was 56 mgs. The blood Wassermann was negative. X-ray showed a large triangular stone in the right ureter opposite the fourth lumbar vertebra which the ureteral catheter neither dislodged nor went by. The stone was removed through a muscle splitting incision, the ureteral wound not being closed. The operation, done under spinal anesthesia, was completed in thirty-six minutes. The post-operative temperature reached 101 twice. On the last four days it did not go above 99.5. On the seventh post-operative night he first complained of pain along the course of his right femoral vein and thirty minutes later he died suddenly, presumably of embolism. No autopsy was obtained.

One patient, not included in this series, a man 56 years of age who was convalescing satisfactorily from a cholecystostomy for ruptured gangrenous gall-bladder, began to have fever not accounted for by his wound, and symptoms referable to the right kidney seemed to indicate catheterization of the ureter. The catheter met but overcame an obstruction at the pelvic brim with release of thick pus. X-ray did not show a stone. Two days later the patient became very septic and died suddenly. Autopsy showed no peritonitis, but the right kidney was found to be a pus filled hydronephrotic sack secondary to long standing obstruction due to a small stone blocking the ureter. This happened in 1916 when our X-ray equipment was not ideal, but since the catheter was so plainly shown on the plate it is probable that the stone was non-opaque. Judging from the autopsy findings, a prompt surgical drainage might have saved this patient.

When one considers the attitude of such able men as Herrick[2] of Cleveland who states that he rarely operates for ureteral stone because he has "gotten almost all of them the other way," our position may seem unduly radical. However, we feel that, in cases such as are discussed in this paper, the question should not be "*Can* this particular stone be made to pass," but rather "*Ought* we to subject this patient to the danger of infection and serious kidney damage which may result if we persist in expectancy and manipulation."

It may not be amiss to stress once again the importance of the factor of delay which undoubtedly was responsible for the serious condition of many of these patients. It would seem that there is an unfortunate lack of understanding in the minds of too many of the profession regarding the serious import of repeated kidney colic and what happens to a kidney when it becomes blocked, especially if it is allowed to remain so for very many hours. Certainly if it were more generally appreciated that such blockage may mean complete cessation of kidney function, and worse if infection is present, fewer of these neglected cases would come to the urologist. Surely also, once a physician has seen the prompt relief of colic due to obstruct-

ing stone which is afforded by ureteral catheterization, he will persist in the use of morphine only until he can get his patient into the hands of a competent cystoscopist.

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THE CHAIR: I will ask Dr. W. M. Coppridge to open the discussion of Dr. Boice's paper.

DISCUSSION

DR. W. M. COPPRIDGE: I notice that Dr. Boice reported that out of 135 cases of ureteral stone, he operated on 36, which makes an operation percentage of 33%. I feel that is rather a high percentage of ureteral operations. However, as he explained towards the last of his paper, the type of case that he sees, that may have a great deal to do with this percentage that required operation.

In 1931 we published our experience of ureteral stones. From 1922 to 1930 there were 300 cases, and we operated on 9.7% of the three hundred. Squires, about the same time—in 1931, reviewed nearly 700 cases in which they operated on a little over 9%. Hinman, in his new book on urology, states that about 5% should be operated. In 347 cases, operated on 6%. For the last five years I have leaned a little more toward operations in ureteral stones. I have felt that we have been very liberal in leaning toward operations. I looked over the cases after I had seen Dr. Boice's paper, and found that we had over 293 additional cases and had operated on 37, which was about 18%. As I say, I felt in operating on 18% of them, we were leaning fairly liberally toward operations.

The very significant point that Dr. Boice brought out is that 34 of his cases had been having kidney colic for a period of over one year before they had any treatment whatever so far as treatment directed toward removal of the stone. I feel that is a thing we ought to think seriously about. I think it is entirely too prevalent for a doctor to see a case of kidney colic and give morphine.

I find in the acute cases there is not very much value in dye—the kidney is almost completely blocked—the function is interfered with considerably, and the dye does not come through. In a chronic case where the obstruction is not so great the dye is of a great deal of value.

Dr. Boice spoke of trying to decide the relative size of the ureter and the stone, and determine from that whether a case should be operated. I think it is well to remember that the ureter, particularly in acute cases, is more likely to be static, and if it is merely that, you have left the stone

there thirty-five or six hours. You find the ureter is not nearly so small as you thought when you made the first plate.

Dr. Boice also spoke of the use of the McBurney incision. I am not sure that I understand exactly what he means by McBurney incision. I always thought it a small, mostly split incision to remove the appendix. I do not believe that the McBurney incision, as I know of it, is a good incision for the removal of ureteral stones. It is too small, does not allow you enough room to go up and down the ureter, allowing the stone to slip from you. I do not do any abdominal incisions. Do not have any occasion to do them or to think of them even. I certainly do not feel that as a general practitioner, it is well to open the abdomen and do pelvic and abdominal surgery, and at the same time remove a stone from an infected ureter. There might be some danger connected with that.

The Chair: Dr. Boice's paper is now open for general discussion.

Dr. S. S. Crow: Naturally the general surgeon would not be as enthusiastic over removing ureteral stones by cystoscopic manipulations as the urologist would be. I think certainly urologists are removing as many stones by cystoscopic manipulations now as they were five or eight years ago. I have not looked up the statistics since Dr. Squires made his report of our work in the clinic, but I am sure that we did not operate on more than ten per cent. There are certain cases where it is better, as Dr. Boice has said, to remove by surgical procedure. We have removed now in the neighborhood of a thousand ureteral stones by cystoscopic manipulations, since we began this work in our clinic—in 1915. As I remember, we have not lost a single case, as a result of our work in removing these stones by cystoscopic manipulations.

I think even the surgeons are coming more and more to having these stones removed by cystoscopic manipulations.

On my last visit to the Mayo Clinic, it was stated that they used to operate on about 80% of ureteral cases, but today they were operating on not more than 20%, and it was thought they would be doing fewer surgical operations for the removal of stones. I do not know what the statistics are now, but we are as enthusiastic for removing stones in this way, taking care of the kidney and infection in the kidney, as we were when Dr. Squires made our last report.

The Chair: Any further discussion of Dr. Boice's paper? If not, I will ask Dr. Boice to close.

Dr. Boice: Mr. Chairman, I expected to be jumped on about this, because maybe, we have been doing too many. However, I stated in the beginning that there were a number of cases that were not hospitalized, whose stones were removed by some other method than cystoscopic manipulation. I think if those were included, it would run our operative percen-

tage to not more than 30% or 35%. In other words, from the condition these patients were in when they came in the hospital, an amount of kidney damage had already been done. We felt that if we tried cystoscopic manipulation it would not be best, and for the patient's own good it would be best to get rid of that stone in the quickest way, and relieve that kidney of its blocking.

In the case I mentioned, this man, after his stone had been removed, and it was all healed up—a month later, his ureter was still very small. You could never get anything but a No. 5 to go up there. I said McBurney type of incision, or some modification of it. Ordinarily you can get through an ordinary McBurney incision—what I mean is to spread the muscles the way a McBurney incision is made, extending that separation as much as necessary by turning it down, and varying the location of it, not as McBurney's point is necessarily, but up or down as the case may demand, and of course no ureter was open while the peretoneum was open. Now, we did do other work, but it was not in this badly damaged kidney. And in this one case I mentioned we had to do a pelvic operation. This woman's stone looked as if it could pass, but she had been worked on until she refused to have anything else done by the finest urologist in the state. As long as we were in the abdomen we finished up, got the ureter clamped between two Alis clamps and blocked off, and sucked out what little urine was retained. . . .

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

TUESDAY AFTERNOON SESSION

May 5, 1936

The Section on Ophthalmology and Otolaryngology of the Medical Society of the State of North Carolina convened as 2:15 o'clock in the Ball Room George Vanderbilt Hotel, Asheville, Dr. Hugh C. Wolfe presiding as Chairman.

Chairman Wolfe: The Section will come to order.

I will appoint Dr. Swann as Secretary.

I believe it is customary to appoint a committee to decide upon the best paper read at the session, in order for us to participate in the Moore County Medical Society Medal. I will appoint on that committee Drs. Fassett of Durham, Greene of Asheville, and Dr. Gibson.

Are there any out-of-state visitors? (There were none present.)

I will ask this committee to make their decision on the best paper and report to me after the session.

At this time it is my desire to express to the men of this Section my deep and sincere thanks for the honor they have bestowed upon me by allowing me the privilege of serving as Chairman for this year. I greatly appreciate the confidence shown, and while I appreciate very much this honor I have not been unmindful of the fact that with the honor there has also been a corresponding responsibility, and in my case, a double responsibility because of the fact that our Secretary elected last year could not serve due to illness and I have had to arrange the program which is to follow, but I sincerely hope my efforts will meet with your approval.

. . . Dr. Wolfe then presented his address as Chairman, entitled, "Submucous Resection of the Nasal Septum". . .

Chairman's Address

SUBMUCOUS RESECTION OF THE NASAL SEPTUM

By Hugh C. Wolfe, M.D., Greensboro

My purpose in presenting this paper is to describe my technique in performing this operation upon the nasal septum. The modern method of submucous resection was established in 1904 by Killian, Freer and Hajek. Perhaps Freer has done more than any other man to popularize the procedure. My modest contribution to the technic in this much neglected and needed operation is my triangular incision and post-operative dressing.

If in bringing to your attention what I consider an improved incision technique for a difficult surgical procedure, results in bringing about more confidence in the surgeon's ability to perform this operation, by lessening the danger of permanent perforation and results in more comfort to the patient I shall feel amply repaid for the effort.

Indications: Any departure from the normal perpendicular position of the cartilaginous or boney portions or both that does or may likely cause undue interference with the functions of the nose, ear, sinuses or respiratory tract is an indication for this operation. In other words any pathological deformity whether deviation, ridge or spur that does or is likely to interfere with the normal breathing or drainage of the nose and its adjacent sinuses, or causes reflex symptoms of pressure especially in the region of the middle turbinate is sufficient cause for surgical interference.

Contra Indications: (1) Age. It is inadvisable to operate on patients under fifteen years of age because the development of the nose is not completed, and operative interference should be postponed, except in cases of severe injuries to the nose and then it is best to remove as little as possible to give adequate breathing and drainage. After the age of fifty the indications should be definite and without question.

(2) Acute Respiratory Infections.

(3) Acute Sinus Infections.

(4) Pregnancy.

(5) Chronic diseases as Cancer, Diabetes, Hemoephilia, Tuberculosis in most cases and syphilis in the active state; also High Blood Pressure.

(6) Some vocations, especially football players and boxers if they intend to continue such sports.

(7) Combined operations on the nose and throat are neither advisable nor necessary as the time element is insignificant when compared with the potential dangers.

Preoperative preparation:

(1) Physical examination including coagulation time and urinalysis.

(2) Evacuation of the bowels 24 hours before operation.

(3) Sedative the night before to insure rest and relaxation.

(4) No food morning of the operation.

(5) Sodium amytal grs. 3½ one-half hour before and repeat at beginning of anesthesia. I find this gives complete relaxation and coöperation of the patient and also tends to prevent nausea which usually occurs following the use of morphine, especially in patients who have never had same before.

(6) The vibrissae is cut off and any scabs and pus wiped away with cotton applicators. The nostrils are swabbed with a solution of hexylresorcnial.

Position of the patient: I prefer to have the patient in a semi sitting position in a chair that can be raised or lowered, as I prefer to operate while standing. However any position is best that suits the operator best. Of course surgical asepsis is taken for granted.

Anesthesia: I spray both nostrils well with 1-1000 nupercaine solution at two-minute intervals for three applications. By doing this the patient will not feel pain when the actual application of cocain takes place. I prefer to use cocain flakes as the anesthetic. I use a steel or copper applicator wound with a small amount of cotton dipped into a 3% ephredine solution. The excess is removed and the cotton dipped into the cocain flakes. I use three on each side. One is placed under the posterior end of the inferior turbinate, one above the posterior tip of the middle turbinate and the third above anterior tip of the middle turbinate. These are left alone for ten minutes when they are moved and if anesthesia is complete, which is usually the case, I remove them and inject ½ c.c. of 1% solution of novocain to which has been added a few drops 1-1000 adrenalin into and under the skin of the septum and vestibular floor of the left nostril. This procedure not only gives perfect anesthesia but lessens very much or practically eliminates the bleeding which usually follows the initial incision.

Incision: Upon the initial incision and the proper elevation of the muco-peri-chondrium usually depends the success ofthe operation. Of course I have used practically all the incisions recommended in the past, but naturally I think my own triangular incision is an improvement.

I prefer to operate through the left nostril but that is a matter for each individual to decide for himself. The incision is made as follows. Using a Heffernon or Allen speculum and a Freer or Beck knife the superior leg of the incision is begun as high as possible about one-fourth inch posterior to the anterior border of the cartilaginous septum, the cut extending downward and forward to the center of the vestibule. The inferior leg is made from the floor of the nostril extending forward and upward to the center of the vestibule and joinns the first incision thus outlining a triangular flap, the tip of which contains a small amount of skin. Both incisions cut down to but not through the cartilage which is recognized by its chalk white appearance. The muco-peri-chondrium cannot be properly elevated unless the perichondrium is incised. There is a characteristic sound as in tearing of paper when you are elevating the perichondrium and periostium.

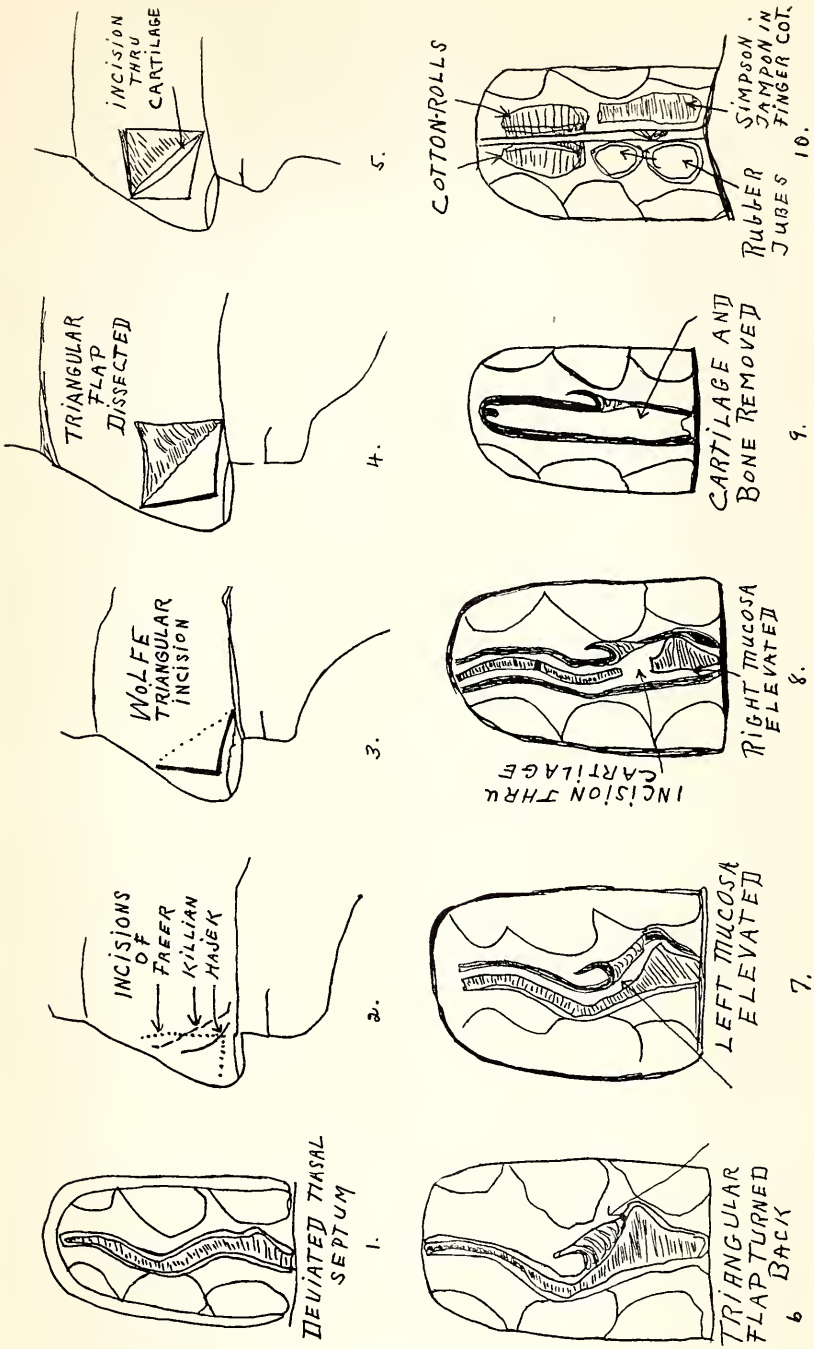
This triangular flap is elevated and turned backward, using sharp, semi sharp and dull elevators as needed to accomplish the desired result. Having elevated the flap you now have as large an entrance as you can get through which to work. Next the remaining muco-perichondrium is elevated from above downward, stripping it from the cartilage, perpendicular plate of the ethmoid and vomer down to the floor of the nose. I find Bal-

lenger's blunt semi sharp elevator and Freer's sharp elevators useful and they should be held as one holds a pen in firm cotact with the cartilage or bone, in order not to tear the membrane. Great respect should be shown when working in the region of the cribiform plate. Skill and patience are necessary to prevent lacerations, especially over sharp ridges or spurs. In some cases, fibers run from one mucosa to the other and these should be cut with a sharp knife, otherwise a tear is most likely to result. Tears of the mucosa in apposition will surely result in a perforation, otherwise they do little harm.

Having elevated the left membrane, the next step is to cut through the cartilage to but not through the opposite perichondrium. This may be accomplished with Freer's knife or Beck's hoe. My triangular flap incision permits you to make this incision at any place you desire within the triangle. If you desire to leave cartilage as support for the tip of the nose, you may leave any part from the tip of the triangle back to its base or remove it all as you will. If by chance you go through the opposite mucosa in making the incision through the cartilage, remember the triangular flap fits snugly into place and have no fear of a perforation. Having gone through the cartilage to the opposite perichondrium, a sharp elevator catches the posterior edge of the incision and by making a picking movement to the right, the cartilage will peel away from the perichondrium and it becomes an easy matter to insert the elevators and strip the membrane from the opposite side. Of course the same care and patience should be exercised as was used in elevating the opposite membrane. Bear in mind that the elevators should be kept in firm contact with cartilage and bone. The progress of the instrument in hand can be observed through the corresponding nostril.

The dissection being completed, the next step is to remove the cartilage. This may be removed with Killian's forceps or Ballenger's swivel knife, however I prefer the forceps. Having removed the cartilage the Foster-Ballenger speculum is inserted between the flaps, and the perpendicular plate is cut through as high as the dissection has been carried, with Struyken forceps, and then removed with Killian's forceps with a rocking motion, which fractures its attachment below and behind. Severing the perpendicular plate of the ethmoid in this way practically eliminates injury to the cribriform plate. The ridge is removed with biting forceps. Care must be exercised here as some fibers may be attached and should be severed with a knife if there is resistance after the bite with forceps.

The cartilage and bone removed, inspection between the flaps should be made for any fragments which might have been left and same, if present, should be removed. If tears in apposition should be made they should be sutured. If lacerations are present but not in apposition, they can do no harm if the membranes are placed in contact. If no tears are made, a counter puncture should be made near the floor in the left flap for the purpose of drainage and the flaps placed in apposition for the dressing.


DEVIATED NASAL SEPTUM
1.
INCISIONS OF FREER KILLIAN HAJEK
2.
WOLFE TRIANGULAR INCISION
3.
TRIANGULAR FLAP DISSECTED
4.
INCISION THRU CARTILAGE
5.
TRIANGULAR FLAP TURNED BACK
6
LEFT MUCOSA ELEVATED
7.
INCISION THRU CARTILAGE
RIGHT MUCOSA ELEVATED
8.
CARTILAGE AND BONE REMOVED
9.
COTTON-ROLLS
RUBBER TUBES
SIMPSON. TAMPON IN FINGER COT.
10.

Dressing:

To my way of thinking a dressing is essential for the following reasons:

(1) To maintain coaptation of the membranes.

(2) To prevent hemorrhage.

(3) To prevent blood clot formation in the muco-perichondrial pouch.

(4) To give proper drainage.

(5) To give ventilation to the post-nasal space.

The membranes are brought into contact with a Richards septum retractor and the triangular flap placed snugly into its bed. If there is no anterior perforation I do not use the suture. Otherwise I insert a suture through the skin tip of the triangular flap which does not tear out as easily as it would through the membrane. With the retractor in place I insert a roll of cotton about the size in diameter of a lead pencil and of proper length, which has been coated with sterile vaseline or some nasal jelly into the upper part of the left nostril. A Simpson tampon is next inserted into a thin finger cot which is also annointed with nasal jelly and this is placed into the nostril and the retractor withdrawn. The retractor is next placed in the right nostril against the membrane and the cotton roll placed opposite the first one. Instead of using a tampon on this side I place one or more pieces of rubber tubing one-fourth inch in diameter on the floor of the nostril, the length of same depending upon the depth of the nostril but letting the end of the tube remain outside of the nostril. The dressings are now in place and a few cubic centimeters of sterile water is dropped into the finger cot and the cot and tube are anchored with a small strip of adhesive.

The patient is now put to bed and the dressing removed in 24 hours. The pain is usually controlled by pyramidon gr. V repeated as necessary. In some nervous individuals it may be necessary to give one-third grain of pantapon hypodermically. The post-operative treatment consists of keeping the crusts and scabs removed and a few drops of an oil with ephedrine three times a day greatly adds to the comfort of the patient. Post-operative complications will have to be dealt with as they may present themselves.

Conclusions:

(1) The triangular incision serves to give a maximum field through which the operation can be performed.

(2) It practically eliminates the danger of a permanent anterior perforation.

(3) The Simpson tampon in the finger cot serves to keep the membranes in apposition and lessens the danger of hemorrhage and clot formations, while at the same time the rubber provides adequate drainage.

(4) The rubber tubing also serves to keep the membranes in apposition, promotes drainage and last but not least serves as a breathing tube,

thus preventing a vacuum in the post nasal space when the patient swallows or eats.

I might say in conclusion that nothing in the way of a dressing will give more comfort than the rubber tube. If you hold both nostrils closed and swallow a few times you will have first hand information about the post-nasal vacuum and will readily imagine what a patient goes through with when both nostrils are packed tight for 24 hours.

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ETIOLOGICAL AND THERAPEUTIC ASPECTS OF BRONCHIECTASIS WITH CLINICAL OBSERVATIONS ON BRONCHIAL LAVAGE BY THE STITT METHOD*

By V. K. Hart, M.D., Charlotte, N. C.

ETIOLOGY

Despite recent clinical investigations there are still some uncertain aspects of the etiology of bronchiectasis. Nevertheless, from these reports we may glean certain facts.

First, it is possible that certain congenital malformations of the bronchial tree may exist. This conclusion is reached because of the cases of so-called dry bronchiectasis that are reported in both adults and children. However, 8 of 20 cases reported by Wall and Hoyle[1] had slight sputum. None of these cases have been encountered; nor have any well established cases become completely dry under any sort of treatment. Nevertheless, some of these patients may represent congenital abnormalities that are fortunate enough never to have become infected. Such cases are probably unusual.

Whether congenital or acquired, the paranasal sinuses occupy a prominent place in current literature as primary sources of infection. If a factor, is the modus operandi by inhalation or by way of the lymphatics? Mullin[2] believes both routes are operative.

McLaurin,[3] and Quinn and Meyer,[4] used lipiodol in the nose and demonstrated some hours later by X-ray the iodized oil in the lungs of the same patients. This argues for the inhalation route.

Clerf[5] feels that every case of bilateral bronchiectasis should suggest nasal sinus pathology. Conversely, he argues that unilateral cases are much more apt to follow pneumonia, lung abscess, or foreign body.

Our own clinical experience bears out this observation. We shall illustrate later by illustrative case reports.

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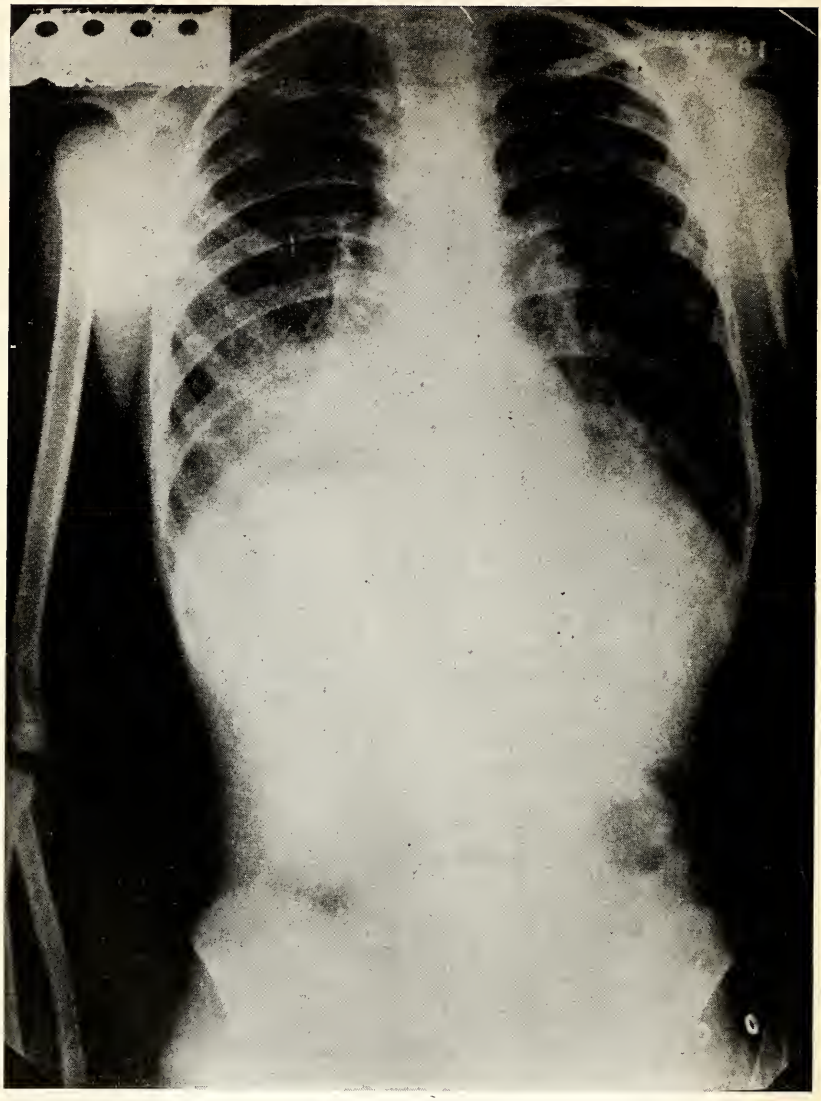

Fig. 1. Child, age 9 years. Bilateral basal shadows somewhat resembling the triangular basal atelectatic areas described by Singer and Graham and emphasized as a forerunner of bronchiectasis in children by Anspach. An acute diffuse purulent bronchitis was present. Viscid pus served as the obstructing medium. Case 1.

Of course one cannot be too dogmatic. Thus Quinn and Meyer[4] reported five unilateral cases having a concomitant sinusitis; and nine bilateral cases without associated sinus disease. Nevertheless, the frequency of associated sinus pathology with bilateral bronchiectasis should always direct attention to the paranasal sinuses.

Hodge,[6] in a recent comprehensive review of the whole subject, published some interesting work. He placed lipiodol in the tracheas of bronchiectatic patients and was able to show by subsequent roentenograms that the iodized poppy-seed oil appeared in the nasopharynges in only 3 of 10 patients. He got similar findings using mild silver protein. In neither group was any opaque substance demonstrated in the nose. He concluded the soft palate was an efficient barrier during coughing. This work argues against the sinuses being secondarily infected.

Moersch, in discussing Hodge's paper, calls attention to the swelling of the mucosa and increase of secretion of a bronchial fistula following an acute infeciton of the upper respiratory tract. He feels this points to a close relationship between sinus infection and bronchiectasis and further states that 50 per cent of the bronchiectatic patients operated on at the Mayo Clinic for complicating sinus pathology felt that they had received benefit despite indifferent objective results.

A pertinent fact may properly be interpolated here. One of our own cases had a unilateral pansinusitis complicating a bilateral bronchiectasis. This finding points to the sinus infection as primary. If secondary why would one side be infected to the exclusion of the other?

The frequency of associated sinus pathology in bilateral bronchiectasis has been rather striking. Not so much attention has been paid to merely hyperplastic changes as shown by X-ray. However, it is felt that hyperplastic change with frank suppuration are contributing pathological factors. Particularly is this true, if a frank empyema of the antrum or frontal is present as shown by observation and irrigation. In all but 3 of 12 cases of proven bilateral bronchiectasis frank hyperplastic changes with suppuration were demonstrated. In these 3, hyperplastic changes in one or both antra were present on X-ray examination.

Six cases of unilateral bronchiectasis in which we have complete records showed the following findings: 1—A complicating sinus infection in only one (hyperplasia with suppuration). 2—a definite history of onset following influenza in one. 3—An indefinite history of bronchitis with an acute pulmonary flare-up following tonsillectomy under ether. 4—In the fourth patient, no predisposing history but that of an automobile accident. 5—A fifth patient whose bronchiectasis followed an acute right upper lobe suppuration. This healed under conservative management including bronchoscopy and phrenicectomy. Some months later he returned with a basal bronchiectasis on the same side. This would suggest that the gravitation of pus into the lower areas during the acute stage, predisposed to the

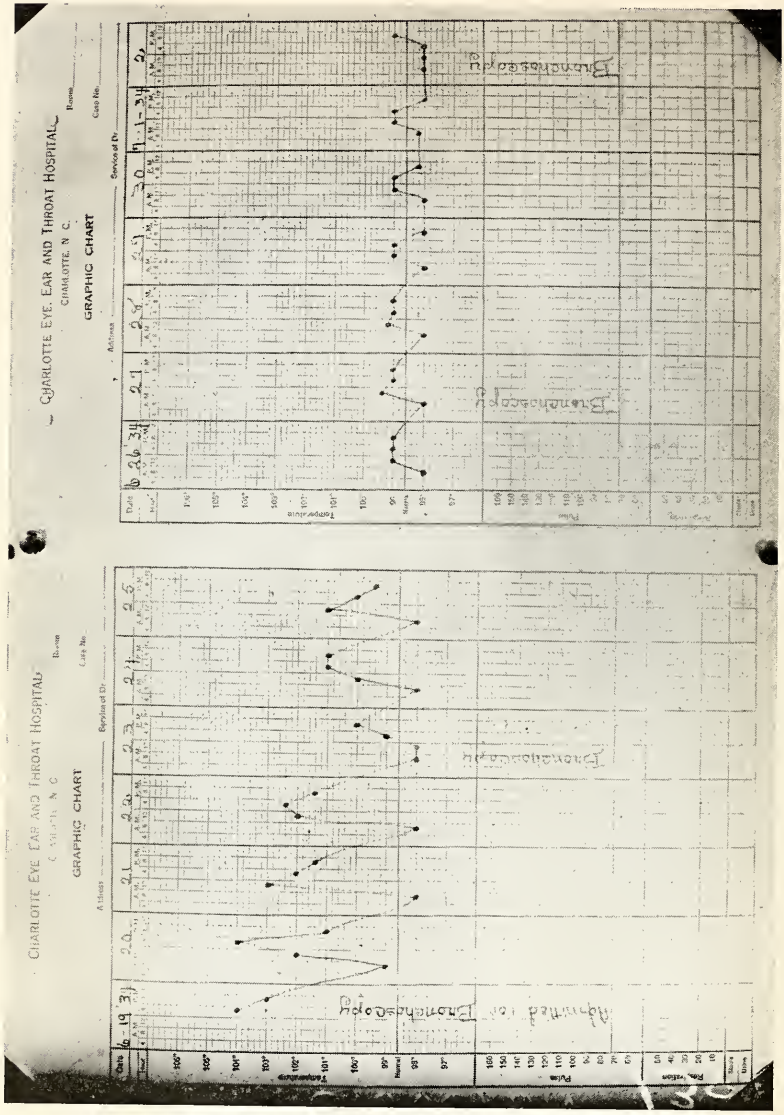

Fig. 2. Temperature chart of same patient showing response to bronchoscopic treatment. This is most important in preventing a subsequent bronchiectasis.

bronchiectasis which followed. 6—A patient with a bronchial carcinoma, and a bronchiectasis secondary to the neoplastic obstruction.

Other etiological factors must be considered. Thus Hodge[6] also mentions the work of Anspach[7] and Sippe.[8] The former ventures the opinion that allergy or an acute pulmonary infection may give an initial obstruction by the swelling of the mucous membrane and the production of thick tenacious sputum. This would produce, particularly, a basal atelectasis with secondary bronchiectasis if not relieved.

On the other hand Sippe believes that hypoglycemia and ketosis may be factors in production of both sinus disease and non-tuberculous pulmonary fibrosis. His references to bronchiectasis are vague and indefinite. He reports nine cases and argues that an exudative process results because of inability to retain water in the tissues. The treatment is the administration of dextrose. No personal experience has been had with such patients.

Brown,[9] one of Sippe's fellow countrymen, disagrees sharply with this theory. He believes that the hypoglycemia is much more apt to be the result of chronic infection than the cause of it.

Lastly, from an etiological standpoint it must be remembered that any bronchial obstruction of any duration predisposes to bronchiectasis on the side of obstruction. Neglected foreign bodies are a common cause. Likewise an endobronchial growth will give a secondary bronchiectasis. Such a patient usually presents the clinical picture of a lung suppuration. We have verified by lung mapping the resulting bronchiectasis in both conditions. Its frequency following neglected foreign body has impressed us.

So much for a brief and elementary review of etiology. Therapeutic aspects are now considered.

THERAPEUTIC CONSIDERATIONS

The frequency of sinus suppurations with bilateral bronchiectasis has been mentioned under etiology. It is felt that such demand radical surgical intervention before any definite improvement can be obtained in the bronchiectasis. On five of the twelve bilateral cases previously alluded to, bilateral radical antrum, ethmoid, and sphenoid operations were first done. A sixth patient, with a unilateral pansinusitis, had an external frontal, ethmoid, sphenoid, and radical antrum on the affected side before undertaking bronchial lavage. Without question, some of the best clinical results were among this group. Let it be noted again, however, that we are stressing the cases with true suppuration and not merely hyperplastic changes. These latter, or silent cases, are still on more debatable ground.

By following this policy, allergic hyperplastic changes are not so apt to be confused with those due to chronic infection. However, suppuration superimposed on allergy, sometimes demands surgical interference. It is interesting to note, that none of the case records here discussed, whether unilateral or bilateral, exhibited any clinical evidence of allergy; or was

Fig. 3. Same patient. The atelectatic basal areas have cleared and the outline of each diaphragm can now be clearly distinguished. Lipoidine has been instilled but no bronchiectatic cavitations are present.

there a personal or family history of allergy. One of these records goes back 10 years.

Interest in therapy has received great impetus since the advent of bronchoscopy, lung mapping, and modern thoracic surgery. The first two may be classified as both diagnostic and therapeutic. Some workers feel the iodine liberated from iodized poppy-seed oil is beneficial.

Surgery is applicable only to the unilateral case. In such thoracoplasty or lobectomy do greatly benefit selected patients. The execution and choice of procedure should be left to an experienced chest surgeon and then only after thorough bronchoscopic and lipiodol studies have definitely established a unilateral diagnosis with absence of other pathology. Moreover, it is assumed that all conservative treatment has failed.

It is pertinent to add that preliminary treatment makes a much better surgical risk. This may be accomplished by bronchoscopy, bronchial lavage or both.

Notwithstanding the surgery now available for unilateral cases there is still a heritage of patients with advanced bilateral bronchiectasis. It is this group who merit real attention and further study. A diagnosis thus established, the physician has been apt to shrug his shoulders and look at the patient with askance. Postural drainage and high caloric feedings were advised; perhaps a few bronchoscopies done; and arsenic given if indicated.

It is emphasized, arsenic is only an adjunct to other therapy. Dr. David T. Smith,[10 11] of Duke University, has done highly commendable work on fusospirochetal infection in bronchiectasis and pulmonary suppurations. Unfortunately, after his work, many general men in our State seemed to get the impression that all that was necessary in these cases, was the administration of arsenic. I am sure, after hearing and talking with Dr. Smith, that he did not mean to leave that impression. Certainly we are indebted to him for so ably re-emphasizing this factor. Nevertheless, in the advanced cases, as will be shown in the records that follow, every weapon at our command must be utilized to get appreciable improvement.

As a result of Smith's work, I now do this: give arsenic for a few doses in a patient with a foul sputum even though the fusospirochetal organisms are not found on dark field examination of a bronchoscopically aspirated specimen. He pointed out in a personal conversation that there are three organisms that will give a foul odor: Welch bacillus, colon bacillus, and fusospirochetal infection. The first two would hardly be expected in the lung. Hence in such cases it is better to err on the side of safety, and use arsenic in connection with other therapeutic measures. A personal preference is for sulpharsphenamine intramuscularly because of greater safety over intravenous medication.

On many, whether the bronchiectasis is unilateral or bilateral, phrenic operations have been done. Usually the worst side is selected by choice.

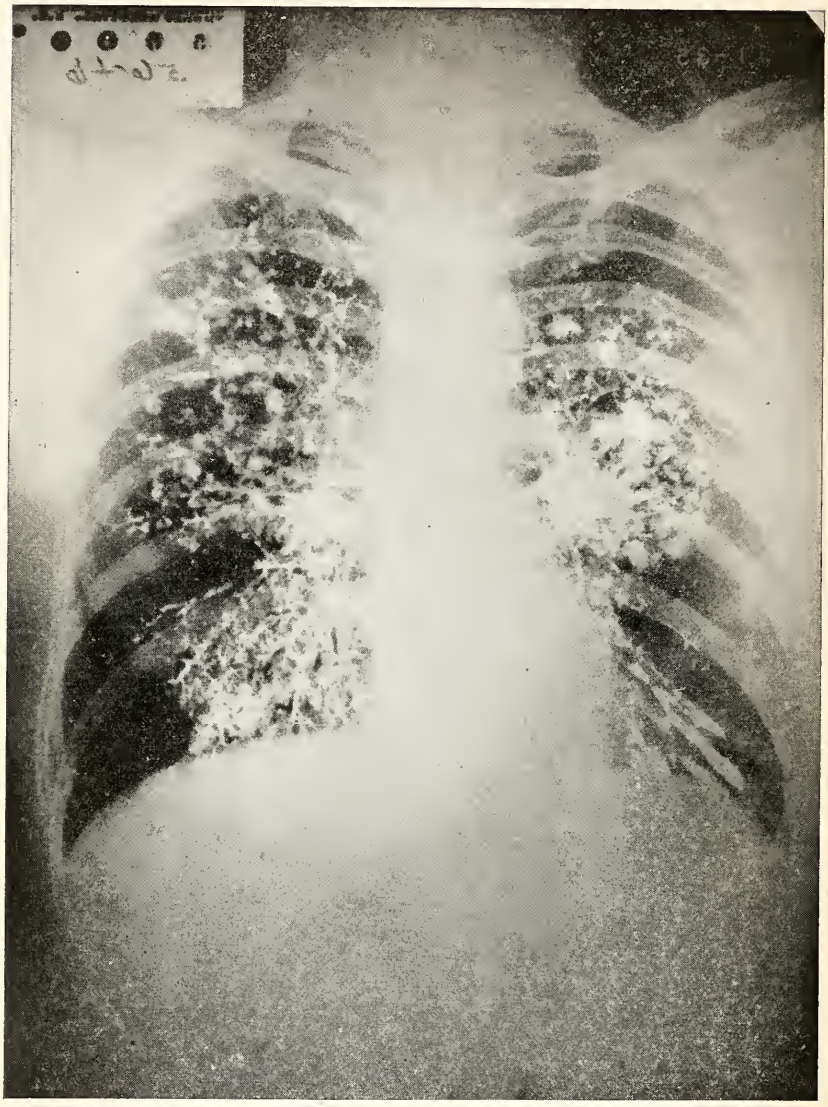

Fig. 4. Male, age 53 years. Left sided bronchiectasis. Only antecedent factor was influenza. Right side fills normally. Case 2.

A few cases of bilateral phrenic have been reported[12] but naturally this is a procedure to be approached with caution and only by the experienced surgeon.

In our own experience a phrenic operation has not as a rule yielded spectacular improvement. Perhaps too much has been expected. I have seen only one dramatic result and that was in the bronchiectasis previously mentioned secondary to bronchial carcinoma proven by bronchoscopic biopsy. The man died later of his carcinoma but was rendered sputum and temperature free. It has proven valuable in severe or repeated hemorrhage but in the bilateral cases now being discussed, the side of hemorrhage must first be determined bronchoscopically.

Diagnostic bronchoscopy should be done on all cases. Thus stricture, neoplasm, unsuspected foreign body, and obstructing granulation tissue may be eliminated. If present they must be dealt with by appropriate measures. A bronchoscopic specimen of pus is also desirable for examination for fusospirochetal infection.

Lipiodol may be instilled at the time of bronchoscopy. This sometimes gives a very satisfactory lung mapping. Our best plates have been obtained by placing a catheter in the trachea under cocaine anesthesia and injecting either side at will by changing the position of the patient. This is done in the X-ray room. Very little movement of the patient is then required after injection.

Any history of allergy should indicate preliminary skin testing with lipiodol. While it has not been done routinely, such a routine sensitization test would provide greater safety.

The diagnosis now established, is further bronchoscopic treatment indicated? The question is answered indirectly. A few bronchoscopic aspirations done once or twice weekly will help stabilize the patient by providing better drainage. Like any other therapy, its usefulness is limited in advanced cases. However, brilliant results may be obtained at times in the early lesions of childhood. Anspach,[7] in his classical paper, has pointed out that atelectasis often precedes the development of bronchiectasis. This is an indication par excellence for bronchoscopic aspiration.

A year ago, one of my confreres stimulated my interest in bronchial lavage by the method of Stitt. I correspond with Dr. Stitt and have followed his technic with only one modification, viz., I had an adapter made to fit the catheter, and after lavaging with hypertonic salt solution, made according to Stitt's formula, I use a suction machine to further cleanse the lung before instilling one to three thousand merthiolate solution. Since Stitt[13] has published the exact technic, it is hardly pertinent to review in detail the same here; particularly since the same will be demonstrated by moving pictures subsequent to this paper.

Suffice it is to say the whole procedure can be done in the office. One dram of elixir of alurate is given as preliminary medication to forestall

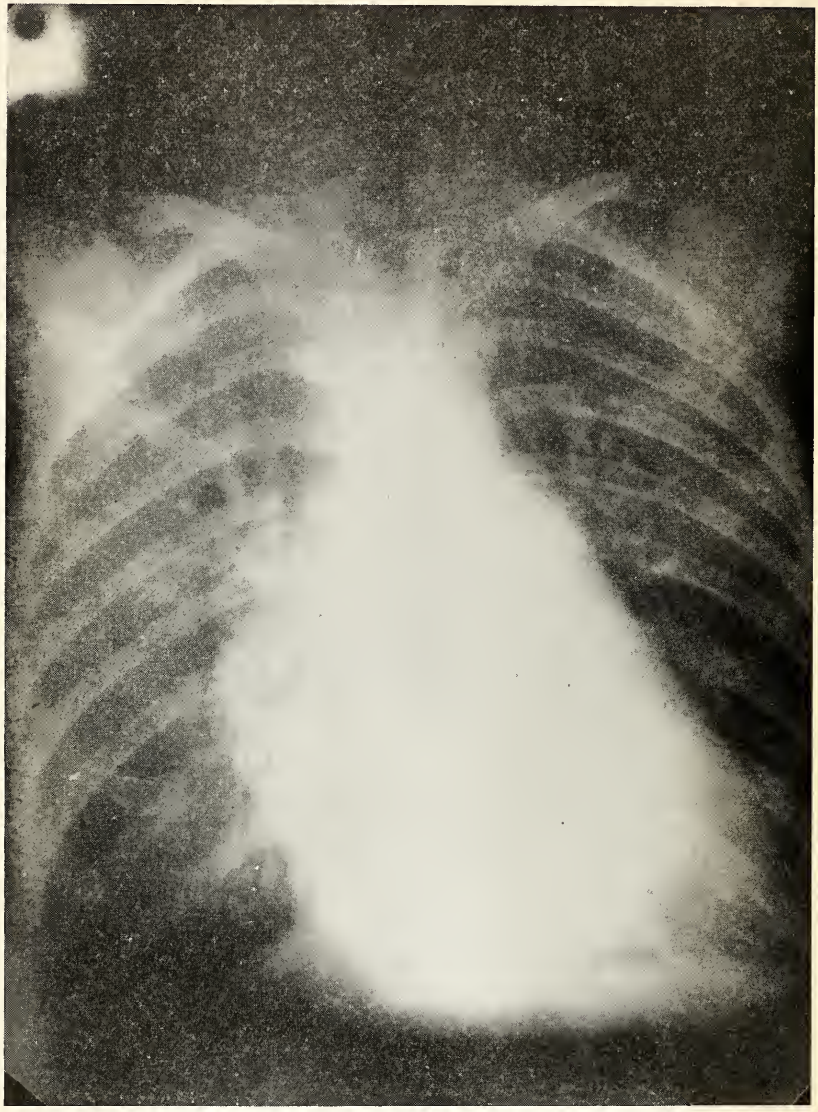

Fig. 5. Boy, age 14 years. Note atelectatic triangular shadow at the left base with obliteration of cardiophrenic angle. Diagnosed as bronchiectasis. Had severe hemorrhage necessitating transfusion. At bronchoscopy, a large mass obstructing the left lower lobe bronchus was removed. Pathological report was pyogenic granuloma. This illustrates importance of preliminary bronchoscopic study.

any possible ill effects from cocaine. The pharynx and larynx are anesthetized with twenty per cent cocaine and then four per cent cocaine is dropped into the trachea by syringe. The catheter is passed by indirect laryngoscopy. Usually the procedure, even in bilateral cases, may be completed in twenty minutes.

During the last year one hundred and thirty-two lavages on thirteen patients have been done. The ages varied from fourteen to seventy-two years.

No serious ill effects have been observed, though as much as two hundred and fifty cc. of salt solution have been often used in a single lavage. Five patients had one or more chills following treatments. The fever always subsided the following day. In three, arsenic had been given intramuscularly following the lavage. In one, no arsenic had been given. In the fifth the chill occurred both with and without administration of arsenic. Apparently, then, the chill results from a stirring up of the infection, or toxic products, or both.

For the first five or six weeks the lavages were given once a week. After that, at intervals of two or three weeks. One of the patients realizes when she is getting insufficient drainage by postural emptying and comes in voluntarily.

What have been the results? Definite benefit was obtained in 11 of the 13 patients. In one the condition was so far advanced that no results at all were obtained by two lavages and treatment was discontinued. In this patient there was also a definite history of a treated acquired luetic infection. However, the history of her bronchiectasis dated back a good many years, probably antedating the specific infection. In the other patient, no diagnostic lung mapping had been done. He had apparently an acute suppurative pneumonitis and it is now questionable whether lavage should have been done. A diagnostic bronchoscopy was done. He objected to further bronchoscopy and lavage was tried as an alternative.

In the other 11 patients, all had proven bronchiectasis either unilateral or bilateral. They were all improved. Subjectively, they felt better, had less sputum, less coughing, and disappearance of odor.

Objectively there was: 1—Disappearance or marked diminution of odor when present. This may have been due in part to the concomitant administration of arsenic. 2—Gain in weight. One patient gained 15 pounds; another 17 pounds; and another 10 pounds. 3—A diminution in the amount of sputum. This is quite striking in some of the advanced cases. 4—Greater energy. 5—Cheerfulness replacing despondency. 6—Absence of acute exacerbations with fever and prostration unless complicating some acute upper respiratory infection. Even then, the attack was shorter and less severe. Particularly is this so if lavage is again started as soon as the acute stage has subsided. 7—More ready acquiescence to lavage than bronchoscopy.

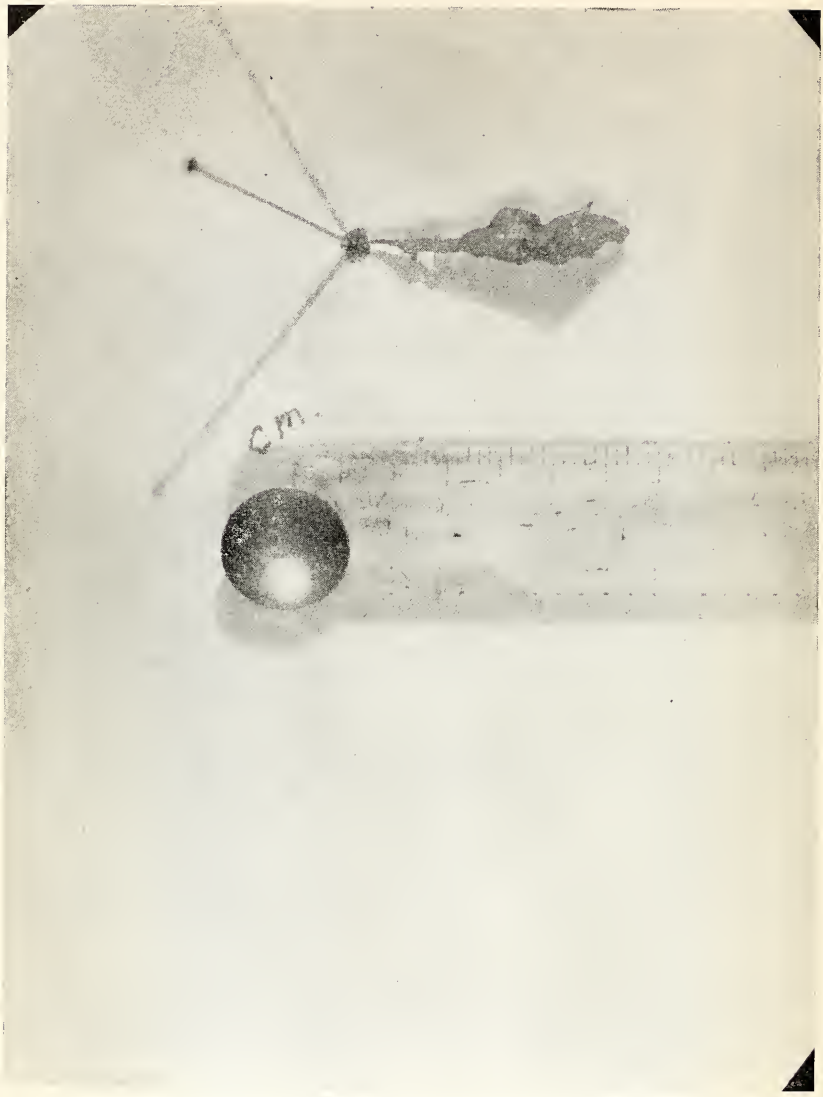

Fig. 6. Photograph of mass removed bronchoscopically from same patient.

ILLUSTRATIVE CASE RECORDS

Case 1. Potential bronchiectasis in child as described by Anspach.[7] Probably some bilateral basal atelectasis complicating diffuse suppurative bronchitis. A male child, age 9 years, was admitted on June 16, 1934, because of temperature and a productive cough. A year previously he had had a somewhat similar attack following measles. He had been well up until three weeks prior to admission. The temperature was 104° (m). The referring physician thought he had a bronchiectasis. Roentgenogram did show a mesial peribronchial density at both bases somewhat resembling the triangular shadows of bronchiectatic lobes first described by Singer and Graham.[14]

Bronchoscopy was done the same day using a No. 6 'scope. A quantity of very tenacious pus was aspirated from both main bronchi. (It would not run down the sides of an inverted specimen collector.) Pus was seen spouting from both upper and lower lobe bronchi on both sides. The bronchial mucosa was diffusely reddened and swollen. Five cubic centimeters of gomenol were instilled.

The laboratory reported a pure culture of a small Gram-negative coccus (catarrhalis group). A dark field examination showed no fusiform bacilli or spirochetes. Culture on Sabourraud's media was negative. No tubercle bacilli were found.

The child was sent home shortly thereafter and treated as an outpatient. Eight subsequent bronchoscopies were done at intervals of four or five days with the instillation of oil. The temperature promptly came down by lysis and he has remained well since. Lung mapping after recovery showed no bronchiectasis. This type of case, neglected however, might easily develop a bronchiectasis. Clerf[5] has emphasized this prophylactic treatment particularly following measles. Any residual sinus infection must also be treated.

Case 2. Unilateral bronchiectasis following influenza. A male, age 53 years, presented himself for examination on July 10, 1935. The complaint was cough. He stated that he had never had any trouble until after an attack of influenza two years ago. Denied pneumonia. A cough followed which did not become productive until two months ago. He thought that he got up one-half to one ounce of pus each 24 hours. There was nothing else pertinent in the present, past or family history.

The ear, nose and throat examination was entirely negative. Particular attention was paid to the sinuses.

Bronchoscopic examination revealed nothing of importance except some pus with odor in both main bronchi (aspirated specimens were negative for fusiform bacilli, spirochetes or acid fast organisms). Twenty cc. of lipiodol was instilled into each side through the bronchoscope and a roentgenogram taken. This showed a moderate left sided bronchiectasis, but normal filling right. The pus on the right side, then, seen at bronchoscopy was just a spilling over from the involved side.

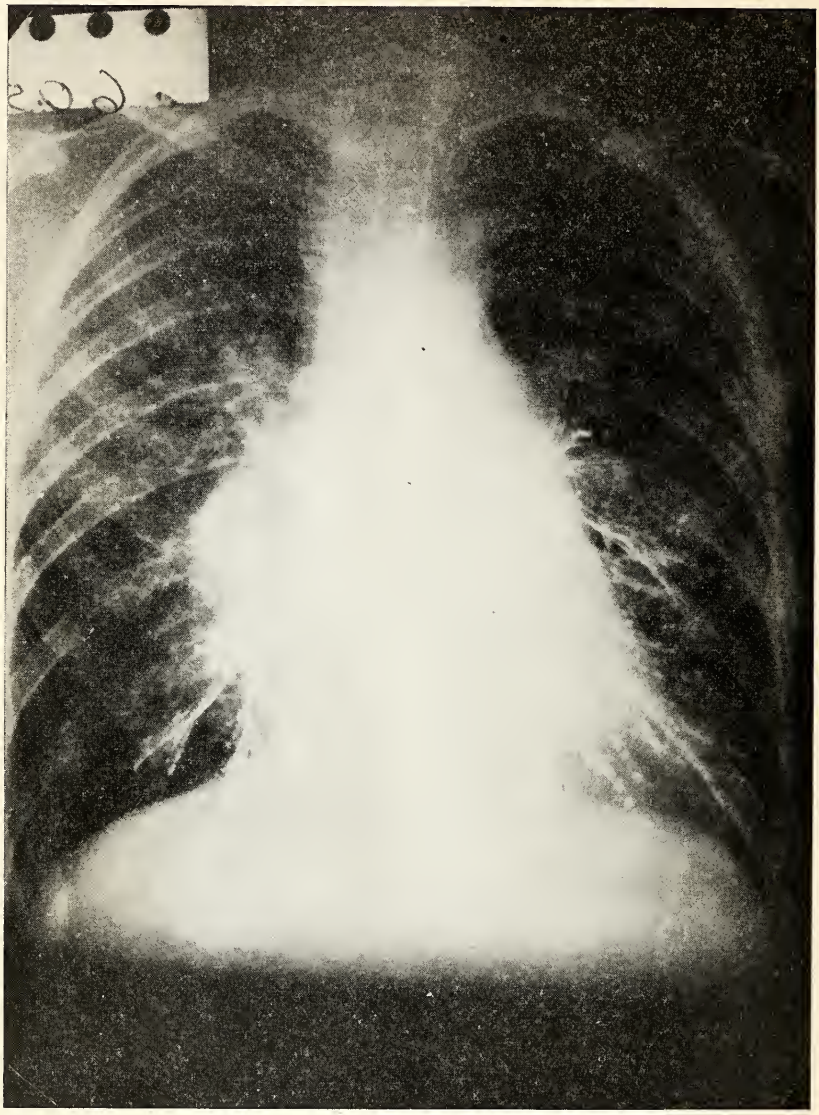

Fig. 7. Subsequent lung mapping of same patient. No bronchiectasis is shown. Atelectasis has apparently cleared.

He was then put on bronchial lavage once weekly. Only the left side was lavaged using about 125 cc. salt solution. This was done once weekly for 10 weeks; and then every two or three weeks until 16 lavages had been given. The first two were combined with 3 gm. sulpharsphenamine intramuscularly because of the odor to the sputum.

The patient had been forced to stop work. He has now returned to full time duty and feels quite well. The odor disappeared from the sputum, the amount diminished, and he now remains quite comfortable on postural drainage done once daily.

Case 3. Unilateral bronchiectasis complicating neglected foreign body. Ultimate lobectomy. A white boy, aged 14 years, was referred to us on September 3, 1931. There was definite history of aspiration of a peanut 12 years ago followed by pneumonia and empyema. Surgical drainage was done for the latter. His present complaint was a constant cough productive of foul sputum.

The roentenogram was reported as follows: "The left chest is markedly compressed (previous rib resection for empyema). There is a marked increase in density throughout the left lung which is more marked in lower half. There is no definite circumscribed abscess. There is some thickening on the right around the hilum, but the rest of the right lung field is normal. The heart is markedly pulled to the left, probably due to adhesions. The diaphragm is apparently normal."

There were, as one would expect, bizarre physical signs over all the left chest. There was marked clubbing of the fingers.

Bronchoscopy was done under local anesthesia, using a No. 6 'scope. Some 250 cc. of foul pus was suctioned from the left main stem bronchus. There was no stricture and no demonstrable foreign body (at this stage had probably undergone liquefaction). Subsequent bronchoscopies showed this pus to be largely from the lower lobe.

Lung mapping was next carried out, using 15 cc. of lipoidine in each side of the bronchial tree. The subsequent X-rays showed normal filling on the right, but a marked basal multiple bronchiectasis on the left.

The laboratory report by Dr. L. C. Todd stated no spirochetes were found on dark field examination; a mixed infection with streptococcus predominating was also reported; and no tubercle bacilli. Other laboratory work was negative.

The patient was running an afternoon temperature of 99°F. to 101°F(M). He was instructed as to bed rest, high caloric feedings and postural drainage. A left phrenic exeresis was done by our surgical consultant on October 2, 1931 with indifferent results. Due to adhesions a full rise of the diaphragm was not secured. Adhesions also prevented the use of pneumothorax.

During the next 18 months we did a number of bronchoscopies. This combined with his regimen at home reduced his temperature and made

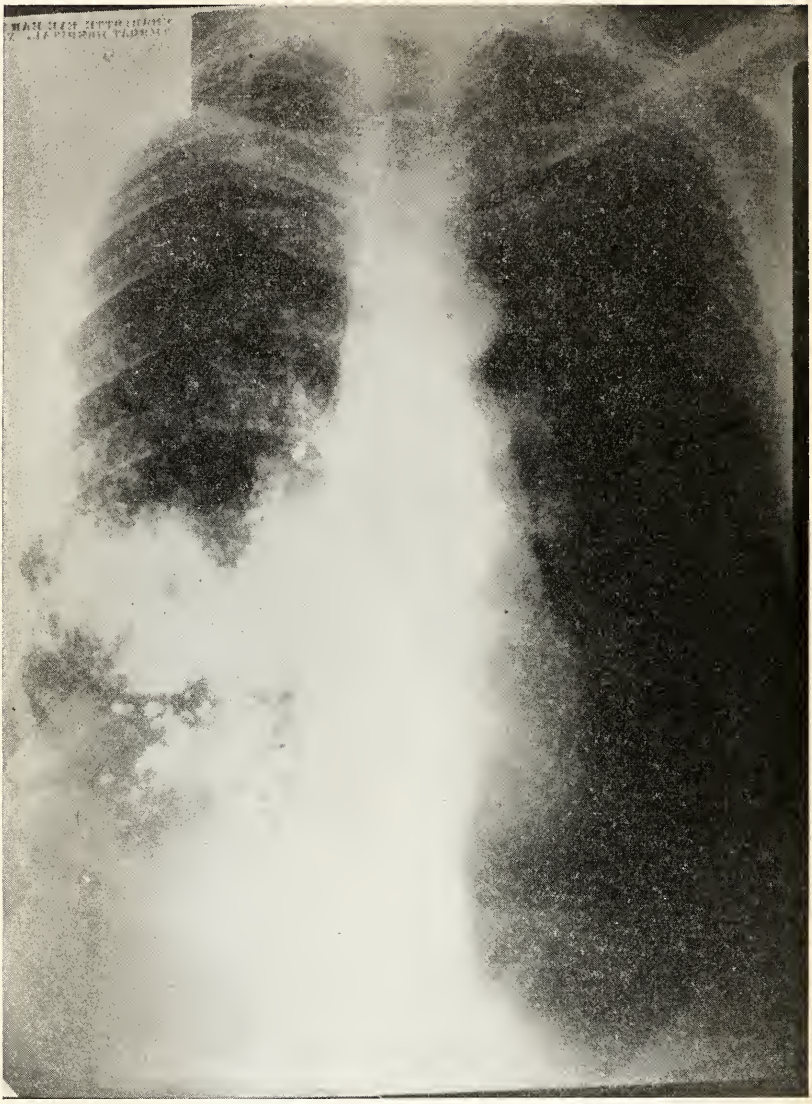

Fig. 8. Right sided bronchiectasis in male age 45 years secondary to carcinoma of bronchus.

him a much more favorable surgical risk. A large amount of pus was always present, however.

At this stage we felt that the only hope for a long or useful life was radical chest surgery of the most skilled sort. He was, therefore, referred to Dr. E. A. Graham of St. Louis. Dr. Graham has since done a left lower lobectomy. He reported some residual bronchiectasis of the left upper lobe. Nevertheless, when last seen a temperature chart kept at home showed him free of fever. The cough and sputum were reduced to a point of little inconvenience, (15 cc.) and the chest wound was entirely healed. The following year he served as manager of his local high school football team.

Case 4. Advanced bilateral bronchiectasis complicated by suppurative sinus disease. This young woman, age 24 years, was first seen on July 10, 1935. Her complaint was productive cough. She had had a lung mapping done six years previously in Detroit with a diagnosis of bronchiectasis. Roentgen studies of her sinuses showed all involved with possible exception of the frontals, and the mucous membrane of these was thickened. She had previously had an intranasal antrum on the left, with removal of the left middle turbinate. Foul smelling pus was washed from each antrum. The blood Wassermann was negative. She had already had a course of arsenic by her family physician prior to admission.

Diagnostic bronchoscopy was done. A quantity of ill smelling pus was aspirated from each side. On the right it was apparently coming from both the middle and lower lobe orifices; on the left, largely from the lower lobe orifice. There was no evidence of obstructing granulation tissue, neoplasm, or stricture. The bronchoscopic specimens showed fusiform bacilli.

Lung mapping by the catheter method showed numerous large, bilateral bronchiectatic cavities. The pathology was extensive and advanced on both sides.

Subsequently two therapeutic bronchoscopies were done. She was then thought well enough to go ahead with necessary sinus surgery.

On July 29, 1935, a bilateral radical antrum, ethmoid and sphenoid operation was done under local anesthesia. She made an uneventful convalescence, and the sinuses subsequently remained free of suppuration.

She was then started on bronchial lavage. At each treatment some 250 cc. of salt solution was used, half on each side. At the same time further arsenic was given in 5 doses of 3/10 gram each intramuscularly (sulpharsphenamine).

After 15 lavages, a second lung mapping was done. There were still bilateral, multiple bronchiectatic cavities. It might be said the cavities were smaller than in the first lung mapping but the difference was not marked.

In all 25 lavages were done. She stated the sputum, which was excessive in amount, diminished one-third. The odor largely disappeared. She gained

Fig. 9. Bronchoscopic biopsy specimen of same patient. Low power. Typical "pearls" of squamous cell carcinoma are shown. Pathological preparations by Dr. L. C. Todd; microphotography by R. C. Meigs.

15 pounds in weight. Her health has been better than in years. Despondent before treatment, she is now cheerful and interested in life.

One influenzal attack recently gave her a temporary flare-up but she rallied quickly from the same without serious trouble. She now comes in for lavage voluntarily every few weeks when she feels drainage is insufficient.

Case 5. Advanced bilateral bronchiectasis complicated by suppurative sinus disease and repeated hemorrhage. A young man, age 31 years, was first seen April 17, 1935. His complaint was repeated pulmonary bleeding. This had begun without any known reason two years previously and had continued at intervals to date. He had had a productive cought for a long time. There was nothing else of importance in the present or past medical history.

It is interesting to note that in his first examination there was nothing suggesting nasal sinus pathology. Bronchoscopy showed pus from both right middle and lower lobes and left lower lobe. Rather free bleeding was precipitated on the left and controlled only by the liberal use of adrenalin. There was no evidence of bronchial obstruction. The aspirated specimens showed no fusiform bacilli, spirochetes, or acid fast organisms. Lung mapping done at bronchoscopy showed a moderate multiple bronchiectasis involving the lower left, and right middle and lower lobes.

A week later he began to hemorrhage and this continued for 12 hours. Bronchoscopy was repeated and the blood shown to be coming from the left side. Phrenicectomy was advised on the left and done by a surgical consultant. This effectively controlled the bleeding and he has had none since.

Because of other experiences, his sinuses were X-rayed some two months later. There was surprising pathology. The mucous membrane of both frontals was considerably thickened; both ethmoid labyrinths showed marked hyperplastic changes; both antra exhibited marked opacities; and the sphenoids were negative. Subsequent irrigation of the antra through the inferior meati returned only a small amount of mucoid material from the left, but considerable thin pus from the right.

For these reasons a bilateral radical antrum and ethmoid was advised and done under local anesthesia on August 9, 1935. The sphenoids were also opened at the same time.

A week after operation bronchial lavage was begun. Because of some odor to the sputum, 3 intramuscular injections of three-tenths of a gram of sulpharsphenamine were also given. Lavage was continued at weekly intervals for nearly 4 months. Lung mapping was then repeated by catheter technic. From such, it could not be said that the bronchiectatic cavities were any smaller.

Lavage was then continued every 2 or 3 weeks. In all he has had 23.

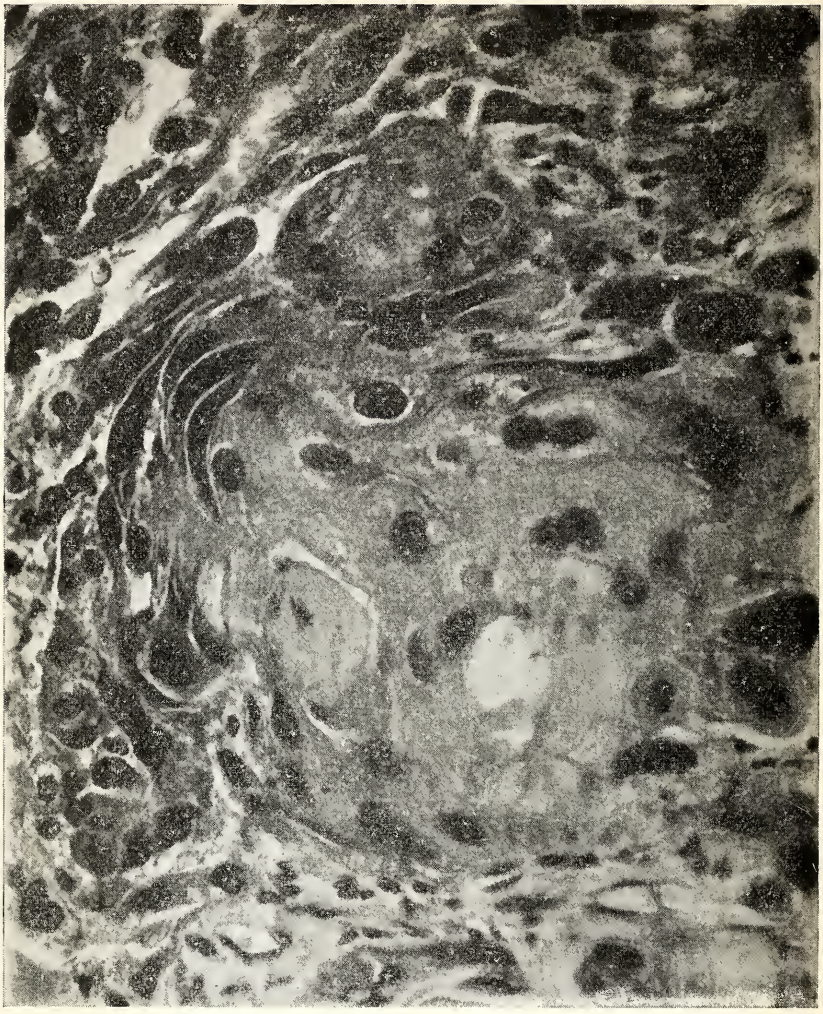

Fig. 10. Bronchoscopic biopsy specimen of same patient. High power.

As a result of the above treatment his general health has been much improved. He states his paraxysms of coughing have been less frequent and that his sputum has been reduced by one-half. He has gained ten pounds in weight.

SUMMARY

Any unresolved pulmonary suppuration in childhood is apt to be a precursor of a later bronchiectasis. Particularly is this true if basal atelectatic areas are present as so ably demonstrated by Anspach.[7] Bronchoscopic aspiration is an ideal method of prophylactic treatment in these cases.

It is felt that suppurative sinus disease is often an etiologic factor in bronchiectasis. The distinction has been made between true suppuration and merely hyperplastic changes. The latter offer a more questionable relationship. It is pertinent and interesting to note here that none of the cases to which reference has been made had a clinical or family history of allergy.

Only three of twelve cases of proven bilateral bronchiectasis had merely hyperplastic changes in one or more sinuses. All the others had true suppurations. Conversely, only one of six cases of proven unilateral bronchiectasis had a suppuration of the sinuses. This would seem to point to them as causative factors in many of the bilateral cases, and possibly in a few of the unilateral cases. The latter are much more apt to follow acute pulmonary infections, neglected foreign bodies, or other obstruction such as a neoplasm. Therefore, diagnostic bronchoscopy should be done in all cases of bronchiectasis.

Even disregarding the etiological element sinus suppurations are thought to be important therapeutically. Improvement with any therapy could hardly be expected with constant re-infection by a postnasal purulent discharge. Some of the best therapeutic results were in those cases where the sinuses received primary attention.

Such cases were first subjected to radical sinus surgery. Treatment was then undertaken by bronchial lavage by the Stitt method. Arsenic was used as an adjunct when indicated.

By following this plan, improvement was noted in all cases both subjectively and objectively. These cases are probably not ever cured in the true sense of the word. However, they are stabilized, the process probably arrested, and they are made happier and more comfortable. At least something has been done for the patient.

It is felt that the Stitt method of lavage has a definite and useful place in therapy. No serious results have been encountered in well over a hundred done in the past year. However, like any other treatment, it must be used as only part of a systematic program. To get improvement in advanced cases, every weapon at our command must be utilized.

Illustrative cases were appended to demonstrate the points in question.

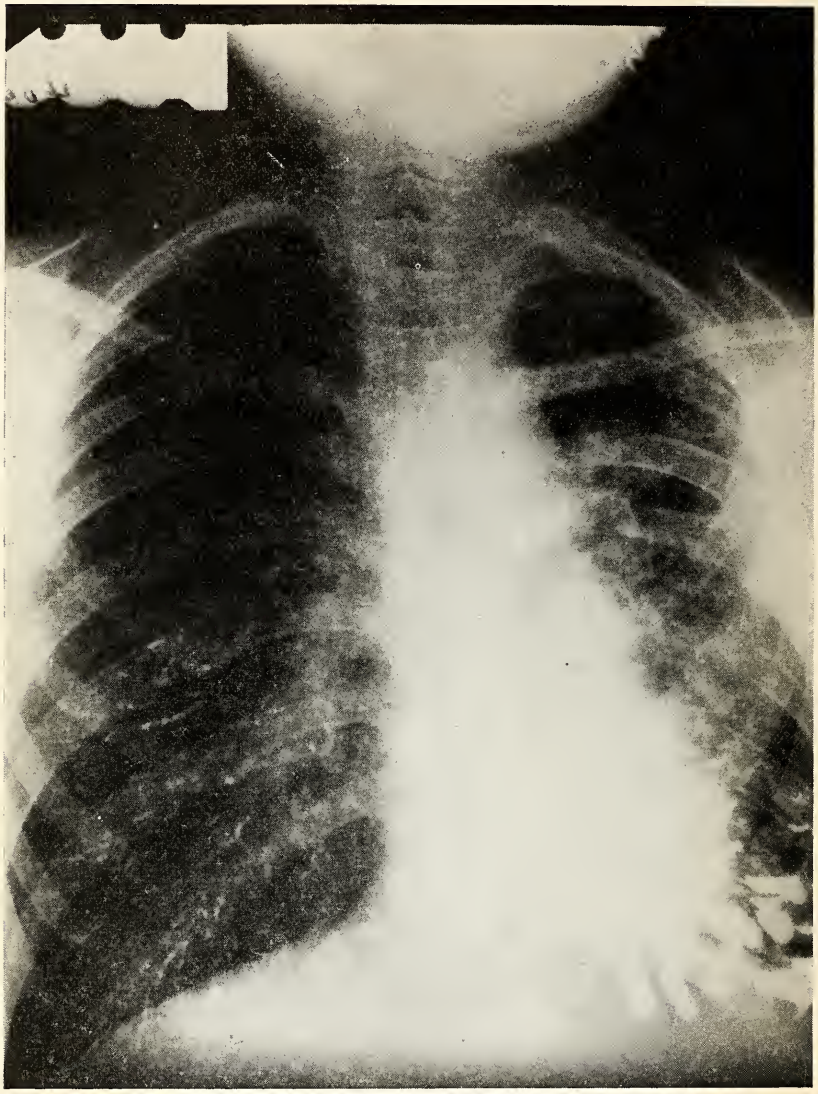

Fig. 11. Lung mapping of 14 year old boy with history of aspiration of a peanut 12 years previously. Note extensive multiple left basal bronchiectasis. Right side fills normally. Case 3.

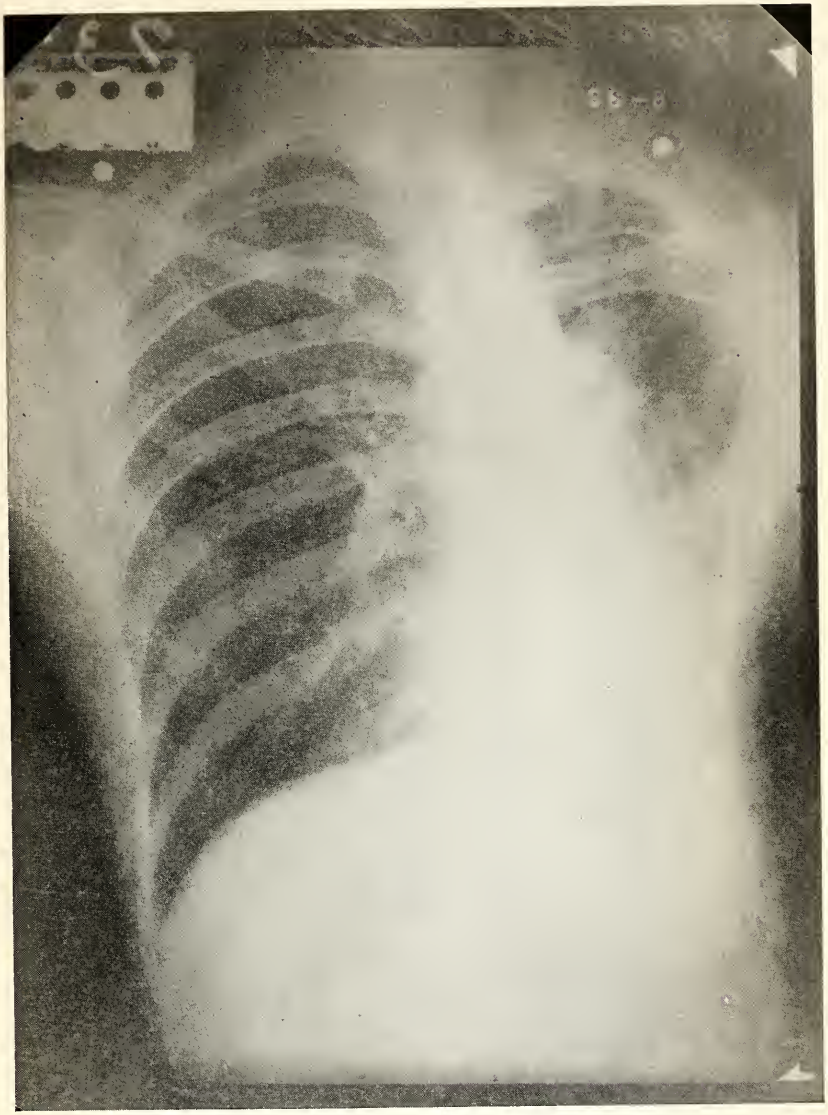

Fig. 12. Same patient after lobectomy by Dr. E. A. Graham, of St. Louis.

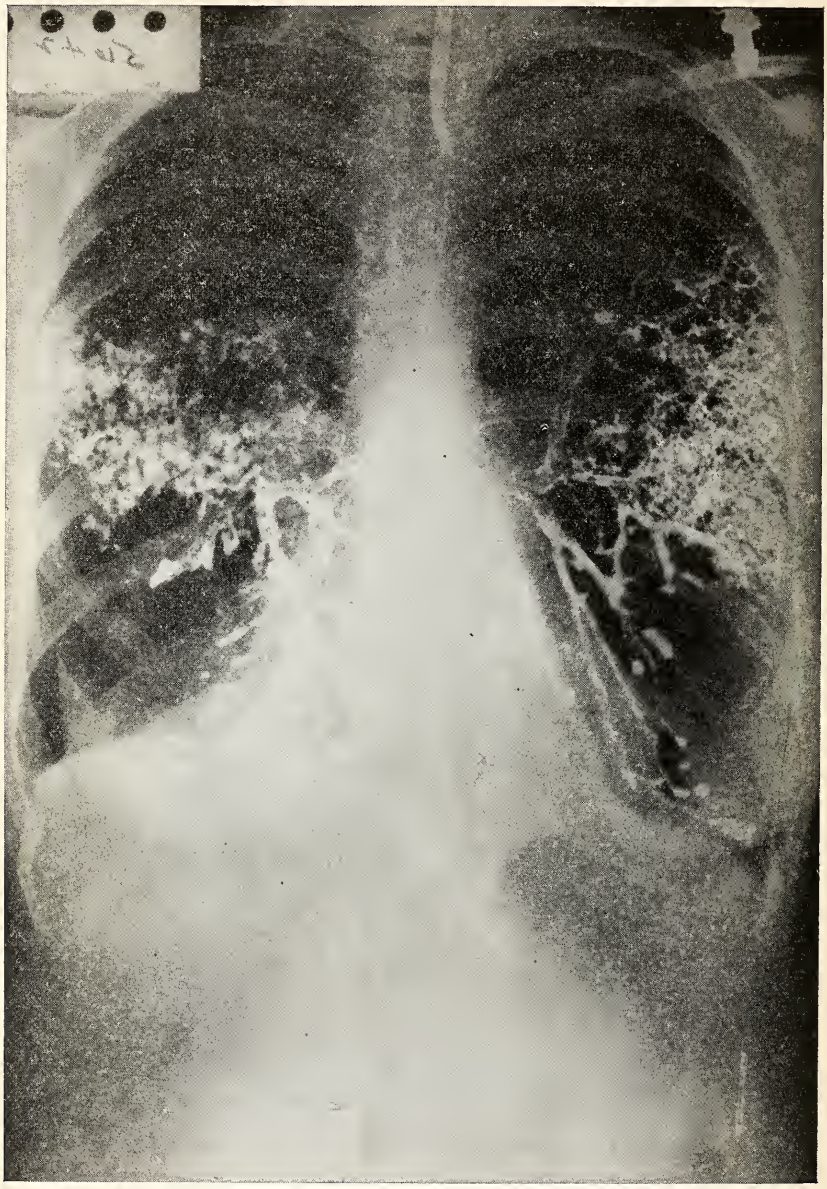

Fig. 13. Extensive bilateral bronchiectasis in young woman, age 24 years. Only antecedent factor was a concomitant sinus suppuration. Case 4.

Fig. 14. Second lung mapping of same patient after preliminary radical sinus surgery and weekly bronchial lavage by the Stitt method for 15 weeks. The bronchiectatic cavities are apparently somewhat less marked, but the change is not striking. Clinical improvement was definite, however.

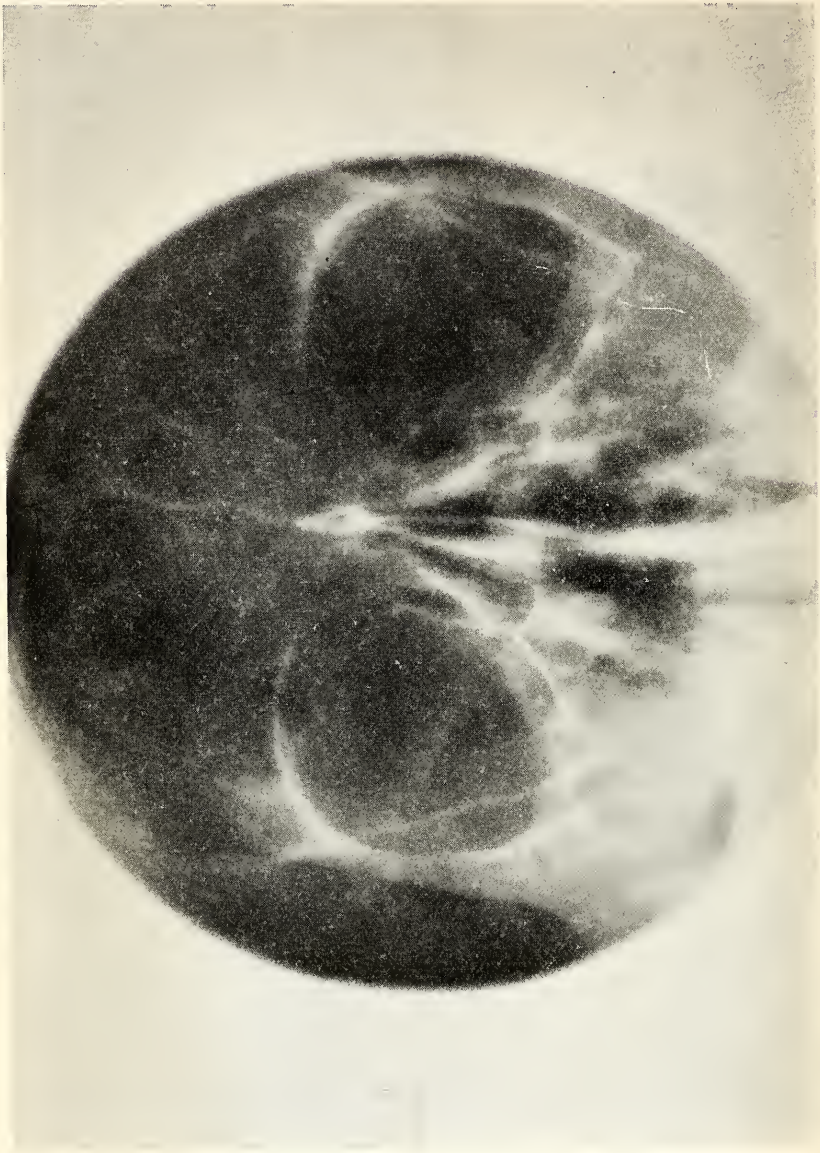

Fig. 15. Sinus roentgenogram of same patient showing extensive changes in both antra and ethmoid labyrinths. Much pus was washed from both antra.

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Chairman Wolfe: At this time, we are going to deviate from the program and call upon a man who is present, who is not on the program. I will ask Dr. Hicks to introduce him. He wishes to make some remarks about the blind in the State.

Dr. V. M. Hicks (Raleigh): My friends, at the last session of the Legislature there was passed a bill creating in North Carolina a commission for the blind. We have with us this afternoon a member of that Commission, Judge Cathey, of Asheville.

It is not my purpose to tell you what the Commission is doing or what it hopes to do. Judge Cathey is deeply interested in this problem, being blind himself, and well-known to the Asheville men and I am sure to a good many of us over the State. He has with him Dr. Cheek who is the secretary of the Commission and it is my pleasure to present Judge Cathey to you at this time. (Applause)

Judge Cathey (Asheville): Mr. Chairman and Gentlemen: Before starting, in order to expedite matters, I will ask the Secretary if he will distribute this outline around, one to each man.

I assure you, on behalf of the Commission, that the Commission appreciates your giving us these few minutes of your time. I know you men are busy, working on serious problems, and I certainly personally appreciate this opportunity to come before you.

Before going into the phase of this problem that you folks are most interested in, I would just like to call to your attention the items listed on this outline, that each of you have, of the work of the Commission.

In 1845 the State realized its social responsibility to some of its unfortunate people, blind people, of the State and in consequence of that founded a splendid institution at Raleigh, of which there are two branches, one for the whites and one for the colored. At the present time there are some three hundred and fifty-five students in those two institutions receiving a Grade A grammar school education, also a high school education, as good an education as can be obtained in any of the state public schools.

But the statistics show that only about thirty-five per cent of the blindness occurs in the juvenile class, while some sixty or sixty-five per cent occurs among adults. Since then, for many years, they have been searching for a plan whereby they could establish an agency to administer to these adult blind.

In 1935, as Dr. Hicks just told you, the Legislature passed an act creating the North Carolina State Commission for the Blind, and we have divided our work up into some eight phases. In passing this act establishing this Commission, the Legislature set aside an annual appropriation of $25,000 to do the many things that need to be done in carrying out and conducting this work under the Commission.

We estimate, and statistics show, that there are approximately four thousand blind people in the State of North Carolina, and, figuring it out mathematically, you can see that approximately six dollars can be used for each blind person in the State on the basis of that $25,000.

First, the law requires us to set up a bureau of information, registration, and advice.

At the present time, we are making a complete survey in the one hundred counties of the State to see how many blind people there are in each county that might be registered.

We have to date 1745 registration and history cards filled out throughout the State, and in our headquarters at Raleigh. And that is the first phase of the work.

The second phase of the work is the industrial and educational phase.

We are at the present time assisting several boys and girls in advanced schooling, college and university, and secretarial schools. We have created three work-shops in the State to give vocational training to boys and girls, to which they may come and learn and then return to their respective communities and carry on that work and earn a livelihood for themselves

in handicraft, etc., adapted to their ability and needs. In those shops we are training them in those crafts so that they can carry on as efficiently as sighted people.

As I say, there are three of those shops in the State that are being carried on.

The third phase is placement. We will have a full-time placement agency working in the North Carolina Bureau of Employment Service, in order that we may register every blind man and woman in the State, and study and work out what type of industry they will be most adapted to, or what line of industry they can go into and work as efficiently as sighted persons. We don't consider that the problem is solved until the person has not only been trained and equipped to hold a job but until he is actually placed on the job and is at work earning his own livelihood in whole or at least in part.

The fourth phase is a public education program. The problem is largely one of public education, both of the blind people and the sighted people of the State, and it is the Commission's intention to bring this to the attention of all the people of the state, through the press, through talks, through the schools, and through examples of the work turned out by the blind people hemselves that is put on the market to compete with other similarly made commodities.

The fifth part of our project is recreation.

The Commission has not as yet worked out a State-wide plan of recreation for all blind people, but that is being worked out in the various districts by the staff members of the Commission, and they engage in such games as bridge, chess, dancing, music, concerts, and things of that kind. As I say, that program is being worked out, and concerts, I might say, are found to be very wholesome recreation and entertainment for the blind people of the State.

The sixth phase of our work is the purchase and lending of all types of supplies and equipment to the blind in order that they may become self-supporting.

Under the law, the Commission cannot make a direct gift, but it can purchase and loan equipment, such as magazine stands, newsstands, or any kind of equipment that a blind person can use. The Commission can purchase the equipment and then sell it in turn to the individual on a retention sales contract, keeping the title in the Commission, but it must be paid for. He can pay the State for it either on a weekly or a monthly basis, or on such terms as are satisfactory to the commission and on which the person can pay for it.

The seventh phase of the work is the aged and infirm blind.

Blindness without any other handicap at all is sufficient to stop a great many people, but there are some blind people who have other handicaps besides their blindness, and it is next to impossible to rehabili-

tate those people. So those people are a great problem. The only way they can be taken care of is through pension or direct gifts, or some such method.

Under the Federal Social Security Law, North Carolina is not eligible to apply for and get money. Our State law is essentially a rehabilitation law. The Federal law is essentially a relief law. There must be some harmony worked out between our State law and the Federal law in order for North Carolina to qualify and to receive the full benefits of the Social Security Act, which we are in high hopes will be done at the next session of our Legislature in January.

That can be worked out by the various welfare organizations in each county making a donation to the Commission. Then the Commission in turn can match dollar for dollar the money from the Federal Security Act to take care of these aged blind, and those who reside in isolated districts and sections of the State who cannot obtain aid otherwise.

The field that you gentlemen are most interested in is that of prevention of blindness, which is the eighth phase of our program. Sixty to seventy-five per cent of the blindness which exists can be prevented, if properly worked on, and that is the field you gentlemen are interested in.

The Public Health Department of the State has done splendid work along this line, for the last several years, through the pre-natal treatment of mothers, strict enforcement of licensed midwives, and the strict enforcement of the law requiring nitrate of silver to be applied in the eyes, and through physical examination of the school children.

The Commission has no desire or intention of overlapping or duplicating the work of the Public Health Department, in the splendid work it is doing, but we hope that we can come in and supplement that work by carrying out some phases and angles of it that it is utterly impossible for the Public Health Department to reach. That is our intention.

In order to do that we have to work harmoniously from one end of the state to the other. We have worked out a plan in which we want you gentlemen—this section of the North Carolina Medical Society—to work with us. I know we have your sympathetic coöperation and understanding, and that you will work with us.

We propose in the various counties to hold local clinics—in every county of the State. The Commission will pay twenty dollars a day to the man who carries on that clinic. If there is only one ophthalmologist in the county, he will look after the clinic for that county. If there is more than one ophthalmologist, they will work on an alternating plan. If there is no ophthalmologist in a county, we will take it up with the Medical Association of that particular county and let them say who they would like to come in and carry on the work in that county.

After these local clinics are built up, we intend to hold a clinic each summer at Raleigh, at the State School for the Blind. The reason for that

is that the school there belongs to the State. It has a well-equipped hospital, and a great many of the counties do not have hospitals.

A further reason is that even under charity—and I am talking of charity cases now—the Commission has to pay two dollars per day to the hospital, and this work can be done on a wholesale plan cheaper in Raleigh than two dollars per day which is what is paid for these patients in the counties which have hospitals.

Another reason for carrying it on there is that the Commission has a trained nurse who just recently completed a post-graduate course at the New York Eye and Ear Infirmary who will devote her full time to this work. She will go around over the State with the various ophthalmologists as they carry on the work in the various counties and she will be in Raleigh during the clinic there to give the follow-up treatment, care and attention necessary, and to carry out the instructions of the ophthalmologist at Raleigh, whoever he may be. In the hospitals, for reasons of economy, they have to get rid of the charity patients as soon as possible. Down there at Raleigh the nurse can carry out the instructions and give the follow-up treatment and care that the doctor thinks necessary and carry on the work much more efficiently.

After the Commission has done all it possibly can for these blind people of the State, there are a certain proportion of them who cannot secure the necessary glasses or equipment that the doctors prescribe for them. The Commission cannot under the law—and wouldn't have the money to do so, if it could legally—go out and buy the necessary equipment for these people. In view of that fact, we have carried on some negotiations with various optical companies and have made investigations in other states as to the purchase price of this material, and we have arrived at a flat rate for charity cases which these optical companies will charge.

We asked the Attorney General if we could, under the law, carry on direct negotiations with the optical companies. He has advised us that it is legal to carry on such negotiations, and we would like to take this up with you gentlemen and ask for your endorsement of this phase of it, so that North Carolina may receive the same favorable rates that Virginia and other states are receiving.

Before a man will be able to qualify for this flat rate he must satisfy the Commission that he is unable to pay the regular price. If you will notice, there is a little card attached to this set of papers. The first thing on there is a certification by some doctor. That will be necessary in all cases. Some doctor will have to certify him. The doctor in the community knows pretty well what families are able to pay and how much.

Then after the doctor certifies him, he has to have the certification of the superintendent of welfare in that particular county, either the welfare superintendent or a teacher, some good, responsible and reliable person whom no one can get to take advantage of the situation.

Mr. Chairman, I don't want to trespass upon your time, but I have a resolution on the second page there that I would like to have you read for me.

CHAIRMAN WOLFE: "Resolved, That the Ophthalmological Division of the Medical Society of the State of North Carolina approves the selling by optical companies of materials at cost to the State Commission for the Blind for certified charity cases, said companies working out with the Commission such concessions as similar commissions for the blind have been given in Virginia and other states."

JUDGE CATHEY: I don't wan't you to act on that now. You can, if you like, take it up at your business session and notify me at a later date. Perhaps you would rather discuss it among yourselves and let us hear from you at a later time. Would you prefer to do that?

CHAIRMAN WOLFE: Yes.

JUDGE CATHEY: Gentlemen, I appreciate this opportunity to speak to you. If there are any questions you would like to ask I shall be glad to answer them and if I can't answer them I will turn them over to Dr. Cheek who will be glad to answer them. Thank you very much, and if you will excuse us we will withdraw now.

CHAIRMAN WOLFE: What shall we do about this resolution? Shall we take it up now or at the end of the program?

DR. BURTON W. FASSETT (Durham): I move adoption of the resolution as read.

. . . The motion was duly seconded. . .

CHAIRMAN WOLFE: You have heard the motion, which has been seconded, that we adopt this resolution. Is there any discussion? If not, those in favor of it signify by saying, "Aye," opposed, "No." It is so ordered.

The next paper on the program is, "Bronchiectasis as related to (a) Sinus Pathology, (b) Acute Respiratory Infections, (c) Neglected Foreign Bodies," with a moving picture on, "The treatment of Bronchiectasis by the Stitt Technic of Bronchial Lavage." This subject will be presented by Dr. V. K. Hart of Charlotte. (Applause)

. . . Dr. Hart presented his paper and moving pictures. . . (Applause)

CHAIRMAN WOLFE: Gentlemen, you have heard the paper. It is now open for discussion.

I certainly think Dr. Hart is to be congratulated for this magnificent presentation of the subject, and I was delighted when I got him to consent to show it. I had seen him present some of it one time before to the Guilford County Medical Society, and I was sure that the members of our Section would be delighted to review his work.

If there is no discussion I will ask Dr. Hart to close.

DR. HART: Doctor, I have taken up too much of your time already and I will just say these few words in closing: if that paper is of any value

it should impress upon you that these patients require the most careful study, and every weapon at our command. No one form of treatment is going to be very useful. You have to use everything you have.

CHAIRMAN WOLFE: The next paper is by Dr. Robert O. Page, of Kinston, "Measures in the Treatment of Concomitant Convergent Squint."

. . . Dr. Page presented his prepared paper. . . (Applause)

MEASURES IN THE TREATMENT OF CONCOMITANT CONVERGENT SQUINT

By B. O. PAGE, M.D., Kinston, N. C.

This subject is one of perennial interest; if my observations be found trite, I have no defense but trust in your forebearance.

At the inception, in order to evaluate its treatment, the following types of concomitant convergent squint are described: (1) monocular squint, in which amblyopia and hyperopia is marked, anisometropia usually present and fusion present, but undeveloped or weak. Monocular squint may arise from amblyopia anopsia or from congenital amblyopia: the latter, however is easily differentiated by the findings in the fundus, which are rarely absent. (2) Alternating squint, in which no amblyopia is present, hyperopia and anisometropia usually absent and fusion not only absent but also incapable of being developed. This last statement is susceptible to attack, but careful analysis would show most, if not all cases of so-called alternating squint—reported to have had or to have developed simultaneous macular perception or even fusion were really cases of monocular strabismus—"accidentally alternating."

The treatment, then, of these types of strabismus has shown progress, but by no means has attained perfection; our goal of (1) parallelism of the visual axes, (2) correction of suppression, (3) development of fusional ability with stereopsis is not always approached and of course often not approachable.

With infants and young children up to 1½-2 years one is naturally limited to perhaps atropinization and/or patching of the esotropic eye—after having ruled out incidental or causative factors by the usual external ocular, ophthalmoscopic routine and occasionally, a general physical examination. Beyond these age limits, a careful refraction, under atropine, with correction up to 0.5-1.0 dioptre of the total (excluding of course the occasional convergent squint in the presence of myopia) should be a starting point. Such a correction should be worn constantly and, in addition, the first two measures are also used. Later, when a child has attained the age of three or so, orthoptic measures may be introduced. Efforts in this field have their limitations: with too great amblyopia, generally placed at a vision of 20/70 or less, even simultaneous macular perception is impossible, to say nothing of stereopsis; fusion is impossible also in alternating squint. Thus the vision in amblyopia must be improved if it

falls below a certain standard; false macular perception must also be detected and overcome. In the case of an older child, amblyopia is often more marked and persistent. Having become well established, it requires a comparatively much longer time to break down the habit of suppression. Occlusion is then of benefit—carried out surely and for several hours a day.

With these conditions fulfilled, orthoptic training to aid in overcoming suppression and to develop fusion into fusion with amplitude and then stereopsis, can be instituted with different types of apparatus. The older variety of amblyoscope has been superseded by the syntophore and its modifications, some of which incorporate many different features, such as the "stereo-orthopter," "rotoscope," etc. In conjunction with the amblyoscope or similar instrument, the cheiroscope, with its attendant stimulation of binocular vision by the interest of drawing and the stereoscope, with exercises such as the Keystone, Wells or Guibor units afford, are valuable. Inexpensive home training units are available with some of these stereoscopic units and make possible fusion exercises to be repeated as often as desired.

The length of time in which non-operative methods should be continued is a variable. As a rule, it is best not to operate upon a child less than 3 years of age, as the status of such a case is difficult to ascertain. A trial with proper correction, if needed, occlusion and orthoptic training for a year, with no response, seems to be a maximum period. On the other hand, surgery is often determined upon the first time the patient is seen; this is true often in cases of alternating squint, in which hyperopia is low and in cases of convergent squint associated with myopia. Surgical procedures, if successful, not only accomplish parallelism of the visual axes and provide a better chance for fusion and stereopsis, but also prevent the mental trauma suffered by the deformed. Of course, cosmetic results alone must often satisfy us.

There are two main types of muscle operations—a shortening and a lengthening procedure. The shortening operations constitute the advancement, the resection, the tucking, the cinch—all of which have their supporters. The one the surgeon selects should be the one with which he has had the best results. This does not mean that his mind should be closed to improvements in muscle surgery—but, by becoming familiar with a certain type of shortening operation, while enlarging his experience, a gauge will be formed, so that end results will be more nearly predicted and thus good results enhanced. The lengthening operation is narrowed to one—the recession. Formerly tenotomies were described, but its disadvantages have caused the virtual abandonment of this procedure.

The choice of the operation depends to a large extent upon whether a convergence or a divergence anomaly is present. In the case of an active convergence excess, present in a convergence strabismus, a recession of the internal rectus should be considered first before a resection or advancement

of the external rectus. In the case of a convergent strabismus, with a relatively weak convergence—divergence insufficiency—a resection or advancement of the external rectus should be considered before a recession of the internal rectus. With a single recession, a deviation of only 15-20 degrees can be corrected, so that, with a higher degree of squint, a double recession or a recession and operation on the external rectus of the same eye will be necessary. If the esotropic eye is highly amblyopic, with a marked degree of squint, the operative procedures should be done on the same eye. Fairly often, a vertical deviation is associated with the horizontal one. It is considered best to correct the horizontal deviation first; afterwards, often the vertical deviation disappears—if not, the muscle at fault can be subjected to appropriate surgical treatment.

The correction of a certain measured degree of squint by a certain number millimeters of recession, resection, or advancement is empirical and is dependent upon numerous factors—the strength or weakness or relaxation of the muscles in question—upon the age of the patient and upon the state of the refraction. The surgical correction itself should not always be complete, as full correction in a young child sometimes causes exotropia as age advances. It does not follow, however, that a squint should not be carefully measured before operation and a well considered opinion formed of the amount of shortening or lengthening necessary.

I shall not attempt to describe in detail the surgical technique of each or any of the muscle operations. A few generalizations, however, may not be amiss. The statement Sir Charles Ballance once made—speaking of the nerve graft operation for facial paralysis—that the operation should not be done "casually by the light of Heaven"—applies here also. Carefully controlled asepsis, illumination and attention to detail are essential desiderata. The choice of an anesthesia is governed partially by the age of the patient: as this age incidence usually falls in childhood—before coöperation is possible, a general anesthesia is most often necessary. With a local anesthesia, pain on the pulling and stretching of the tendon and muscle is disagreeable and not amenable to anesthesia; this can be lessened by as little manipulation of the muscle as possible. The minimum of dissection, yet severance of the check ligaments, sharp atraumatic scleral needles, care on the scleral bite—all those are important. Perforation of the sclera is a disastrous accident, which I once saw during a recession, while the tendon was being severed. Fortunately, there were no untoward after effects: two years afterward vision in the eye was normal. As to the suture material, I feel that chromic catgut is preferable and this, of course, requires no removal—a decided advantage in many cases.

Orthoptic training is of considerable importance in post-operative care and observation. The amblyoscope, the syntophore (and its modifications), the stereoscope, are here used as before to measure and develop fusional ability and to reach the ultimate stereopsis, if possible. Incidentally, these are of aid in helping to overcome the diplopia which often is annoying

to the older child for some period after operation. With parallel visual axes, this orthoptic training may be continued for some time—as long as there is continued improvement; if however there is still a deviation uncorrected by the surgery in question and this is not amenable to orthoptic measures—further operative procedures must be considered.

REPORT OF CASE WITH MARKED AMBLYOPIA AND ESOTROPIA

Miss B. H., an orphan, gave history of an inturning right eye since the age of 5 years. She had been wearing glasses for the past 3 years; refraction under atropine showed the total hyperopia O.D. to be plus 2.50 S.; O.S. plus 3.00 S. with plus 0.50 cylinder axis 90. She was wearing O.D. plus 2.00 sphere, O.S. plus 2.50 sphere with plus 0.50 cylinder axis 90. An esotropia O.D. of 50 degrees and a 1 degree right hyperphoria was present. Simultaneous macular perception was present when loose prisms base out were used. Operation was advised and on Oct. 19, 1935, a recession of the internal rectus O.D. was done of 4 millimeters. Two weeks later, there was still 30 degrees of esotropia—with the same amount of hyperphoria. Four weeks after the recession, the same eye was operated upon (because of the marked amblyopia) and the external rectus was advanced to within 2 millimeters from the limbus. After the last operation, the eyes became parallel, and have remained so. Three months later, vision in the right eye had improved to 20/50 and now the patient is slowly developing fusion with amplitude, using the Keystone stereoscope and the stereo-orthopter.

REPORT OF CASE OF MONOCULAR SQUINT ASSOCIATED WITH LOW HYPEROPIA

Mr. L. G., occupation tobacconist, complained of an interning left eye since early child hood. Family history and past history was irrelevant. Under atropine, the total error in O.D. was found to be plus 0.75 cylinder axis 180, O.S. plus 0.75 cylinder axis 10. With this correction, vision O.D. was 20/20, O.S. was 20/30. He was wearing approximately the same correction. The strabismus—esotropia O.S. of 25 degrees—was more marked for near than for far distance.* On Dec. 15, 1935, a 3.5 millimeter recession of the internal rectus was done under local anesthesia. The eyes were straight after the procedure; since that time, patient has developed fusion until at the present time he has a small amount of steropsis.

DISCUSSION

Dr. Henry H. Briggs, Jr. (Asheville): I think Dr. Page did this so well, there is not much left to say about it. I agree with everything that he said, even to the chromic catgut.

I am very much interested in fusion. I think DeBor left the impression that it is quite easy to do and that your results are frequently quite good, which doesn't seem to be the consensus of opinion. There are only a small proportion of cases, in the first place, that straighten up due to fusion

*There was simultaneous macular perception with the use of prisms.

turning alone. It requires a great deal of patience and a great deal of experience to do proper fusion work, and I doubt if most of us have had the opportunity to acquire all of this.

Also in developing fusion we can develop a false macula as well as cure one, and we have to be very careful of this.

CHAIRMAN WOLFE: Is there any further discussion?

DR. F. C. SMITH (Charlotte): I have a few lantern slides that I am going to show before the general session tomorrow, but I wish to just show this. This is on paralytic squint. It is a little bit off the subject, but I believe it is worth seeing.

(Slide) This is a case that Dr. Henry Sloan, with whom I am associated, operated on. You will notice he had a facial paralysis and practically thirty-five per cent squint. This is just after the operation.

(Slide) Here you see him after a year of cosmetic treatment, and he has the power to swing this eye out a little. We took a half of the superior rectus and a half of the inferior rectus; we resected this portion, transplanted half of the superior on the stump, advanced this muscle and did a trichotomy.

There have been three of those cases and all three of them have had good cosmetic results.

CHAIRMAN WOLFE: Is there any further discussion?

The next paper is by Dr. W. W. Eagle, of Durham, on "Irradiation of the Lymphoid Tissues of the Rhino-Pharynx." Dr. Eagle!

DR. EAGLE: Mr. Chairman, Fellow-Members: I would like to state that Dr. R. J. Reeves, of the Department of Radiology, coöperated in making the observations reported in this paper.

. . . Dr. Eagle then presented his prepared paper. . . (Applause)

IRRADIATION OF THE LYMPHOID TISSUES OF THE RHINO-PHARYNX

By WATT W. EAGLE, M.D., Durham, N. C.

In November 1935 we reported, at the meeting of the Southern Medical Association, a series of 143 patients who had rhino-pharyngeal lymphoid hyperplasia and infections, who had been treated by irradiation therapy. Our total number of cases seen at that time was about 225. We had referred all patients not treated by ourselves to competent radiologists elsewhere, and they were not included in our report.

In that series of 143 patients we found that 70% had noticed good results following irradiation, 24% had questionable results, and 6% had negligible or poor results. These statements were replies to a questionaire.

Since that report was made we have seen and treated a large number of additional patients and the consensus of opinion, without any tabula-

tions, seems to verify the pre-existing opinion that good results are obtained in the majority of cases.

The idea for irradiation therapy of the lymphoid tissue of the rhino-pharynx occurred to us in 1930, when it was recalled that a noticeable destruction of normal lymphoid tissue had occurred when radium, or radium emanations, as well as therapeutic X-rays had been used in treating malignancies occurring in the pharyngeal tonsils or other lymphoid structures. It was also recalled that we had seen patients who had keratosis of the tonsils, that had been treated by irradiation, where there also had been a noticeable diminution in the macroscopic size of the tonsils. It seemed justifiable, then, to attempt the use of therapeutic X-rays on those patients, who, after tonsillectomy and adenoidectomy, had symptoms of chronic rhino-pharyngeal irritation, which we felt were due to infected and hypertrophied rhino-pharyngeal lymphoid tissue.

The history of irradiation of lymphoid tissue dates back at least to 1904 when Heinicke reported the observed effects of irradiation of the various tissues of the body. Warthin at Michigan, in 1905, also had reported the destruction of lymphoid tissue by irradiation. After a lapse of eight years, Regaud and Nogier, in 1913, reported further studies on the effect of lymphoid tissue irradiation. All of these workers, however, had been dealing mainly with lymph nodes from various portions of the body, rather than of non-encapsulated lymphoid tissue, such as may occur on the posterior wall of the rhino-pharynx. It is this latter non-encapsulated, granular, and reddened lymphoid tissue to which we directed our therapy.

Up to the year 1920 no one had found, or had suspected, that there was any clinical significance that could be attached to irradiation of the lymphoid structures. However, Witherbee of New York, in 1919, and Waters with his co-workers, two years later in Baltimore, began to irradiate tonsils in an effort to destroy these structures. Witherbee, after two years of observation, reported in 1921 a series of 46 cases treated, in which he had noticed mainly a marked shrinkage in the size of the tonsils and a marked reduction in the bacterial count found in the cultures from the tonsillar crypts. He attributed the reduction of the bacterial count to the decrease in the size of the lymphoid follicles, which in turn had provided better cryptic drainage. The results of the 14 cases treated by Waters were reported in 1925 by MacCready, showing the outstanding benefits of the irradiation therapy of the tonsils to be: the reduction in the frequency of head colds and all upper respiratory infections in general. He pointed out that irradiation therapy should not supplant the surgical operation in the destruction, or removal, of tonsils.

Between the years 1922 and 1925 additional reports were found in the medical journals. Babcock, in 1925, summarized the results of all workers for the preceding four years, the summary analyzing the 49 most important published reports of that period. He found that 57% of the authors had reported good results from irradiation therapy, 22% had reported

questionable results, and 20% felt that irradiation therapy was without any practical value. One must bear in mind that all these reports dealt with irradiation therapy of the encapsulated pharyngeal tonsils. Therefore, it is not without surprise that there was a decline in the good results reported, as the novelty of this therapy wore off in the following years. In 1927 Dennman suggested the combination of ultra-violet rays with X-rays and reported a series of 500 cases treated by such method, all of which he felt had satisfactory results. By 1930 irradiation therapy of tonsils had been supplanted by radium emanations in the form of radon seeds. The use of radium emanations was short-lived, however, and was used only in what were considered non-operable tonsils.

During all of this period of activity with irradiation therapy in the various forms, there were several workers who had noted the importance of the pharyngeal lymphoid follicles scattered over the posterior and lateral pharyngeal walls. Williams in 1928 and Knox in 1930 remarked that the cure of rheumatic fever and rheumatic heart disease made imperative the complete destruction of all rhino-pharyngeal lymphoid tissue, and they thought it might possibly be accomplished by irradiation.

In our series of patients we selected for irradiation therapy those patients who had recurrent or frequent sore throats, as well as other local symptoms, and also those patients who had generalized systemic disturbances that we felt might be attributed to such infected lymphoid tissue of the pharynx. Naturally, the largest group of these patients were those who were frequently incapacitated or annoyed by sore throats. In only one instance of the total series of our cases were the tonsils not removed by previous operation. Among the group were singers and speakers, in whom there was an economic and professional factor to be considered each time sore throats occurred. Other patients had systemic disturbances, such as nephritis, bronchitis, asthma, asthmatic bronchitis, neuritis, iritis, arthritis, and innumerable other diseases arising from a focal infection. We found several patients who had metabolic disturbances, such as diabetes and thyrotoxicosis, both of which conditions, as everyone knows, are difficult to control when they occur concomitant with infections. There were a large number of patients who complained of gastric symptoms. Gastric neuroses may occur simply by swallowing the discharge originating in the rhino-pharynx.

Of the group with local symptoms one found sore throats, postnasal or pharyngeal discharge, recurrent hoarseness, enlarged and tender cervical lymph nodes, and pharyngeal neuroses. All of us have seen patients with these and numerous other symptoms, and we probably have failed to alleviate these symptoms by any conservative or even radical treatments. Throat sprays and gargles, at their best, do not reach very much of the pharyngeal mucosa and most medications do not actually penetrate the film of mucous covering the pharyngeal mucosa. Thus very little beneficial effect can be expected. We have found that occasionally patients can be relieved by the application of an alcohol and acetone solution of the

germicide used, because the film of mucous is dissolved by the accompanying ingredients, allowing the germicide to penetrate into the tissues. There is, however, no destruction whatever of the rhino-pharyngeal lymphoid tissues by such therapy, and sooner or later the patient will return with recurrent symptoms. Professionally, one is embarrassed by the continued return, time after time, of the same patient, unless he, in despair, has drifted to some other specialist while seeking some relief. It is for this group that we find that we have accomplished the greatest good, and it is pleasing to have 70% of the patients reply favorably to a questionaire, which sought a frank and unbiased opinion of the results obtained.

It was interesting to note that of the four patients who stated poor results had been obtained, two of them were the most neurotic individuals of the entire group. In our opinion they were benefited, since the visible follicles of lymphoid tissue in the pharynx had been destroyed. Of the 24% that had questionable results, we accepted their statement of bare facts that questionable results had been obtained, but we were amused that one of them wrote us that his general health was the same, when his original complaint had been only sore throats, which he stated had disappeared.

Our patients varied from four years to fifty-eight years of age, but neither of these ages can be considered as an age limit. There was very little difference in the sex, there being 66 females and 77 males. We consider six treatments at ten-day intervals as an average complete treatment, but we found that there were some individuals who required only two treatments, while others required eight.

With the newer high voltage X-ray machines of recent date one is able to obtain much better results than were obtained several years ago. The ordinary X-ray machine which is used for X-ray film work is not of sufficient voltage to be of much, if any, help whatever in this method of therapy. Our method of treatment has included the use of 130 kilovolts with 5 ma., 25 cm. distance, while using 3 mm. aluminum filter. Three hundred and seventy-five roentgen units are used in producing an erythema dose. We felt that the use of 150 R. at two-week intervals was preferable to the use of 100 R. at weekly intervals. It was noticed that following the more frequent treatments a dryness of the pharynx tended to occur and the submaxillary salivary glands had a tendency to enlarge and become tender, as well as the cervical lymph nodes. These reactions usually appeared within three hours following treatments. There was no immediate visible diminution in the size of the lymphoid structures of the pharynx, but after several weeks or months one could easily discern that there had been marked, if not total, atrophy and destruction of the lymphoid tissues. Several workers, notably Akaiwa and Soto, as well as the earlier workers, such as Warthen, have described the histopathological changes following irradiation.

As far as we have been able to discover, Soto, a Cuban, in 1932 is the only one to have reported the irradiation therapy of rhino-pharyngeal

lymphoid tissue; which work, by the way, was coincidental to our observations. He reported a series of eighteen patients in which he found similar results to ours and further remarked that lower respiratory infections diminished in frequency according to the results obtained in the upper respiratory tract. Both of us have noticed that improvement in the allergic patient was obtained only where the allergens were bacterial in origin. Soto's method of therapy employed was considerably different from ours, but the end results—so far as amount of irradiation and relief of the patient's symptoms were concerned—were the same.

In summary, we have traced briefly the history of the early studies of the effects of irradiation on lymphoid structures, without any subsequent clinical therapeutic value being recognized. Years later, attempts were made to destroy *encapsulated* pharyngeal tonsils by the use of therapeutic X-rays which did destroy to some extent such structures, but was later discontinued after the novelty had worn off. Radium and its emanations also were eventually discarded and surgery regained its original place as being the most satisfactory method of removing tonsils. We have attempted to show that alleviation of symptoms, which can be traced to hypertrophy and chronic infection of the *non-encapsulated* lymphoid tissue scattered on the posterior and lateral walls of the rhino-pharynx, can be obtained by the use of high voltage X-ray therapy. We have previously reported a series of 143 cases and have observed additional patients treated since the previous report. We have voluntary statements which show that 70% of our patients receiving irradiation of the rhino-pharyngeal lymphoid tissues were relieved of their symptoms, 24% gave questionable effects, and only 6% had poor results. We thus feel that we have a satisfactory method of treatment for those patients with chronic and recurrent infections of the rhino-pharynx, which can be attributed to hypertrophied and infected lymphoid tissue.

DISCUSSION

Dr. C. C. Swann (Asheville): Mr. Chairman, if I may do so I wish to state that I can vouch for the effectiveness of this particular treatment for conditions in the nasopharynx.

I didn't know that Dr. Eagle was going to speak of Dr. Soto. That is where I picked it up.

We had a boy here at the Asheville school from Havana three years ago. His pharynx was studded with large discrete adenomatous patches. Dr. Soto wrote me and asked me to take the boy over, to look after him while he was here, and told me what he was doing for him. He continued the treatment, and after a period of about a year and a half his pharynx was just as smooth as the palm of your hand. It was perfectly normal in appearance.

That is the most remarkable effect that I have seen from it.

I have used it on comparatively few cases, but the results have been good, far superior to surgery—going in and snaring them out with a small snare, or using the electric cautery.

CHAIRMAN WOLFE: Is there any further discussion? If not, have you anything further to say, Dr. Eagle?

DR. EAGLE: I might say that Drs. Cook and Groove in New York and Woodard at the University of Virginia have used this same method for the past few years and they say they have had good results, also.

I do think that this method offers a chance for the surgeon before he takes the tonsils out of being able to tell the patient that he can probably alleviate his sore throats afterwards at least to some extent. Many patients want you to promise that if they have their tonsils out they won't have sore throats. A good many of them, as you know, do have sore throats afterwards. For those patients that do want us to promise such after-effects, we can tell them beforehand that after their tonsils have been removed we will give them X-ray therapy and probably relieve them of sore throats afterwards.

CHAIRMAN WOLFE: Is there any general discussion?

DR. A. C. MCCALL (Asheville): Mr. Chairman, I have listened to the papers presented here and have enjoyed them very much, and I would like to offer something for the good of the order.

It seems to me we should designate someone to open the discussion on each paper. I think it will bring out the kernels in the nut and that we will get more out of the papers. There is a tendency for us all to hear a paper and if we don't have an opening in the discussion of it we are apt to let good material go by and we don't benefit by it.

I think we should keep that in mind hereafter so that we may have each paper officially opened by some designated person—as many as want to, of course—but I think there should be at least one person designated to discuss each paper. I just offer that for consideration.

CHAIRMAN WOLFE: I think that is a good suggestion. I think probably the best method would be for each man who is going to read a paper to select some one particular man to discuss his paper or to open the discussion.

DR. MCCALL: I would like to make that as a motion, that that be a part of our routine, if it is in order. I think we miss a great deal by not having that done.

. . . The motion was duly seconded by Dr. Fassett. . .

CHAIRMAN WOLFE: You have heard the motion that each man that agrees to read a paper will also suggest some man to discuss his paper.

. . . The motion was put to a vote and carried. . .

CHAIRMAN WOLFE: The next paper on our program will be read tomorrow before the Second General Session by Dr. Frank Smith, the title being, "Results of Operations for Retinal Detachments."

Last year when I was elected Chairman I told the members of the Section that I was tired of seeing about half of the fellows get up and go out on account of the fact that we had long drawn out programs, and it has been my idea this year to have a short, snappy program. I hope I have succeeded because our whole program, including Judge Cathey's talk, has consumed less than two hours, and I want to thank the men who have coöperated by writing papers and giving us this program that I am sure we all enjoyed.

Is there any unfinished business to come before the Section?

Is there any new business?

I have a matter that I want to bring to you. I have talked to several men about it. I don't know how you will feel about it or whether you will be in favor of it or against it.

However, it looks to me like, with an institution such as we have at Durham in Duke University, we ought to be able to have some post-graduate work that would appeal to the nose and throat men of our State.

Every year I have been receiving programs from the different universities—Washington University in St. Louis, Cook County Hospital in Chicago, Guild's Hospital in Roanoke, Indiana University and Denver University—about these post-graduate intensive one-week courses they have, where the men can go and review the subject at hand.

It looks to me like it would be a mighty fine thing if we could work out something of that nature here, and I believe if we could bring good men into North Carolina from other places to supplement the teaching staff at Duke it would be to our mutual advantage.

I would like to have some discussion on that point to see what you think about it.

Dr. Eagle: Mr. Chairman, we at Duke University will be glad to coöperate in any way we can and I am sure Dr. McPherson, who has a hospital there, will also coöperate in any way he can. We do have facilities there which we can use, and if the Society decides they would like to go into this, I would be glad to take it up with Dr. Davison and Dr. Rankin and others whom it would be necessary to see. We will be glad to do anything, from our standpoint, that we can.

Chairman Wolfe: Are there any further remarks about that?

I think that is something we ought to be interested in. Of course, we can go off somewhere else and spend a lot of money and not get any more out of it than we could close at home, and I believe that some of the best men in the country would be glad to come down here and carry on this work, say, a week out of each year.

Dr. McCall: I haven't thought much about this, but I will move that the Chairman appoint a committee to take this under advisement and to discuss it at our meeting which we will have some time before this

body meets again and at our State E. N. T. By that time we will probably have something to bring before them. They will probably meet in the central part of the State and have a good crowd there and we will get the reactions of both bodies.

I am personally for it—heartily for it.

DR. EAGLE: May I make one more statement, for those who probably haven't known about it in the past?

Two years ago we had an orthopedic seminar. Numerous lecturers came from all over the country. Last year we had one on gastro-intestinal disease. This year it will be on some other subject. In other words, it will be a long time before it will rotate around to the subjects in which this Section is interested.

I think Dr. Wolfe's idea is to have a course every year, instead of rotating around every number of years. What we have had in the past, there has been no charge for. It has been open to all doctors of this State and adjoining states such as Virginia, Tennessee, and South Carolina. It has been a three-day seminar, with various clinics going on.

I don't know whether that is exactly the idea Dr. Wolfe had in mind, or whether he had in mind having operative clinics and not so many talks. In the past we have not had operative clinics, but illustrated lectures, and so on.

CHAIRMAN WOLFE: You fellows speak up and tell us what you think about the idea.

DR. JAS. M. LILLY (Fayetteville): I think this is an excellent idea, and I get up merely to say that I think it would be wise to have as two members of that committee Dr. Eagle and Dr. McPherson, since they are right on the ground.

I just offer that as a suggestion.

CHAIRMAN WOLFE: I had that in mind.

Is there any further discussion?

DR. S. D. MCPHERSON (Durham): I would suggest that you select a committee from other towns rather than Durham. I would suggest that you might put Dr. Eagle on the committee but most of the members should be from other cities.

CHAIRMAN WOLFE: We will take that under advisement. I am not going to put all you fellows from Durham on that committee.

I have had a letter from Dr. Davison—in fact, I tried to get Dr Davison to give us a paper for our Section, in order to get him down here, but he had a previous engagement and couldn't come. But I think he is more or less favorable to the suggestion, and I don't think any of the men I have talked to about this were unfavorable to it.

I don't know whether we can work it out like these other universities hold their clinics or not. I don't know what the attitude of Duke will be about it. But I know that some of these other universities put on some

good programs because I have attended some of them, and it does a fellow good to mingle with fellows who are in the same line of work that he is in, and particularly it is beneficial when you have men from different sections of the country and can get their ideas. I think it is very helpful.

Did you make that in the form of a motion, that we appoint the committee, or was it merely a suggestion?

DR. MCCALL: I will put it in the form of a motion, to get it before the house.

CHAIRMAN WOLFE: Is there a second to the motion?

. . . The motion was duly seconded. . .

CHAIRMAN WOLFE: It has been moved and seconded that your Chairman appoint a committee to investigate the feasibility of having this postgraduate course at Duke. All those in favor of it let it be known by saying, "Aye," opposed, "No." It is so ordered.

The next order of business I suppose is the election of officers for the ensuing year.

Who will you have for your Chairman?

DR. FASSETT: Mr. Chairman, I would like to nominate Dr. Frank C. Smith, of Charlotte, for Chairman.

. . . The nomination was duly seconded. . .

CHAIRMAN WOLFE: Are there any further nominations? If not, all those in favor of Dr. Smith let it be known by saying, "Aye," contrary, "No." Dr. Smith is elected. (Applause)

Who will you have as your Secretary?

DR. MCPHERSON: I nominate Dr. A. C. McCall of Asheville.

. . . the nomination was duly seconded. . .

CHAIRMAN WOLFE: Are there any further nominations? If not, all in favor of Dr. McCall as our Secretary for the ensuing term let it be known by saying, "Aye," contrary, "No." It is so ordered.

I hope our new officers will continue my idea of not keeping us in session all afternoon. I think this is about the fastest session we have ever had, and I believe the fellows enjoyed it although a few of them did get up and go out. I don't think that is a good thing to do. If we have a short, snappy program, I think the men really ought to sit through it because it makes a fellow feel badly to go to all the trouble that he has to go to to prepare a paper and then have to get up and read it to about six people.

Again, I want to thank you men for having had the honor of serving you this year.

I now declare the meeting adjourned.

. . . The session thereupon adjourned at four-twenty o'clock. . .

(The committee selected to decide upon the best paper presented to the Section selected Dr. Hart's paper.)

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY AFTERNOON SESSION

May 6, 1936

The Section on Practice of Medicine of the Medical Society of the State of North Carolina convened at 2:15 o'clock in the Ball Room of the Battery Park Hotel, Asheville, North Carolina, Dr. A. B. Holmes presiding as Chairman.

Chairman Holmes: The Session will please come to order.

As we know, the papers are supposed to be limited to fifteen minutes and the discussions to five minutes.

The first paper on this program is by Dr. Nash of St. Pauls, "Cancer and the General Practitioner."

. . . Dr. Nash then presented his prepared paper. . . (Applause)

CANCER AND THE GENERAL PRACTITIONER

By J. F. Nash, B.S., M.D.

Within the past two decades, tuberculosis, the great white plague, which had accounted for the largest majority of the death roll, has given way to cardio-vascular disease and cancer. This fact has been accomplished by the better diagnostic methods; a freer use of X-ray; examinations by competent physicians employed by state sanatoria; general dissemination of cardinal symptoms of the disease to the laity, and various tuberculosis associations.

Main credit for a reduction in North Carolina is due to our efficiently staffed, adequately equipped State Sanatorium, where tuberculosis cases are restored to health, properly trained to take care of themselves and prevent the spread of infection to others.

Statistics of the Bureau of Census, and those of the Metropolitan Life Insurance Company vary but slightly, those of the insurance company showing a somewhat smaller per cent, doubtless due to the fact that the policyholders are largely urban, thus allowing closer medical observation, prompter diagnosis and earlier treatment. The bureau's figures are *urban* and *rural* in the registration areas, and when thus compared should show a slight elevation of percentage, however, they both display every stratum of society, color, sex and age. Cancer last year claimed 140,771 lives—that is, seventy-seven per hundred thousand of population, and approximately twice that of tuberculosis. The rate is fairly negligible before the age of forty, after that there is a radical increase, after thirty-five per cent of all female deaths are due to malignancies.

There has been no material increase in mortality from cancer in the past quarter of a century, although figures indicate a slight increase, explainable by a lengthening of the span of life, and a decrease in infant and childhood mortality. White and colored race rates are not widely divergent. The great majority of accessible lesions, i.e., skin, buccal cavity, anus, heart, external genitalia (including cervix uteri), are cured—on the other hand of the unaccessible ones, i.e., brain, oesophagus, lungs, liver, stomach and peritoneum, 50% are fatal to males and 75% to females. Nor is there any basis for the age old superstition that a virgin is more prone to cancer of the breast than a married woman. Charts exhibited at meetings of the American Medical Association, American Public Health Association, and other assemblies, reveal that this disease is one of the death roll leaders, that more females than males die of it, and that the aged are quite subject to affection of the digestive tract.

It is a generally accepted postulate that malignant neoplasms may be cured by sufficiently early diagnosis, and prompt, complete removal before metastases have occurred. Unfortunately prompt diagnosis and removal cannot always be had on account of lack of pain and absence of cosmetic deformity in incipiency, nor will it be denied that complete extirpation can be secured by one, or a combination of surgery, radium, X-ray or electro-surgery; and usually a series of treatments, rather than a single one, is necessary. What is necessary for a better eradication of this scourge that brings a long period of invalidism, graver physical pain, serious economic loss that can ill be spared, and finally loss of life of a dear one to friends and kinsmen? The needs are many: (1) Much larger endowments for research. (2) A closer correlation of cancer data and statistics. (3) Closer coöperation of the medical fraternity. (4) Education of everyone in the cardinal symptoms of malignancy.

Education could be secured by traveling cancer clinics, the expense of which should be borne by state or municipal funds, for it's a well known fact that folks are always anxious for something free, and many would avail themselves of an opportunity for a complete examination without cost, thus procuring early diagnosis and treatment.

But obviously this plan of endowment and education in these days of innumerable taxes (including sales tax) would fail to pass any legislature, therefore, *perforce* the burden of enlightenment falls on the physician, and the peculiar relationship of doctor and patient allows this to be done without a great deal of effort, and a timely warning by the physician will be esteemed a favor and find ready response. It is surprising how readily many fall in with the suggestion of annual physical examinations. The records of the examinations should be filed on a printed form, or one of personal devising, for comparison year after year. Particular attention should be paid to the skin, blemishes, eruptions, and the condition of the breast and genital organs.

Post-natal check-ups should be done on every case. Many cervical

lacerations will be noted, and every minor or extensive tear can be cured painlessly by the electric cautery, thus avoiding ulcerations and the possible site of malignancy. The treatment is relatively simple, and performed readily in any office.

Inaccessible cancer means death in a majority of cases, but even these incurable can be cheered by reports of removal of stomachs, larynx, and even whole lobes of lungs, and some cure may possibly be devised—witness the advent of insulin, and the thousands of diabetics then doomed, many of whom under insulin are living today.

Accessible tumors, early removal, give hope of permanent cure, and these can under that "influence have the sun to shine in the dark places, the birds to bring their choicest songs, the flowers to lift their smiling faces, and the world once more become a worthwhile place in which to live."

DISCUSSION

Dr. J. S. Brewer (Roseboro): To my mind Dr. Nash has presented a very interesting and timely discussion of the problem of cancer.

As I see it, the general practitioner, the family physician, constitutes the first line of defense in the attack of the cancer problem in North Carolina or anywhere else. The general practitioners are the key men in the prevention of cancer and in the diagnosis of cancer.

I don't feel that the general practitioner is so much concerned—that is, actively speaking—with the treatment of cancer. My feeling is that the treatment of cancer is almost always strictly a field for the specialist. I think the treatment of cancer should be made much more a special work than it is. But first of all, to get cases treated and to get them early enough to cure them, we have to have them diagnosed, and the general practitioner and the family physician is usually the first one to see these cases.

Not many years ago, when surgeons first began to attack the cancer problem, somebody criticized the physicians for which I think we can understand him. He took a somewhat wrong and erroneous attitude towards the subject of surgery in cancer. They of course saw so many fatalities and instances of failures of cure when the problem was attacked by the surgeons that the older family physicians, many years ago, themselves developed somewhat of a fear of the knife in the treatment of cancer, and they passed that thing on to the public, to their patients. There was developed more or less of a fear among the laity of the treatment of cancer by surgery.

So what happened was this: Those older physicians told their patients who came to them with suspicious tumors or questionable lesions around the mouth or face—or moles that were beginning to give a little trouble —"You leave that thing alone, don't you bother that." If it wasn't giving any trouble at all they would say, "Just let it alone, don't bother with it until it bothers you."

When it was giving some trouble but there wasn't any pain, those old fellows were fearful of the knife and they passed that thing on to the public, and up to the present day we physicians are confronted with that problem.

Lots of times persons who have suspicious lesions don't go to their physicians, don't consult them, because of that fear that got out many years ago among the people, and just let these suspicious things alone—"as long as they don't bother you, don't you bother them." It is up to the general practitioner and the family physician to get that phobia out of the minds of the people.

The only way it can be done is by the practitioner appointing himself a committee of one in his practice to get across the problem of the early diagnosis of cancer to the people. It can be done. It is being done in lots of localities. Lots of physicians are doing it. And when that is gotten across, then the patients will come in to the practitioner earlier with these suspicious lesions, and he can handle the case, if necessary send them back home and say "There is nothing to it." If necessary he can send them on to the cancer specialist.

Also, as Dr. Nash said in his paper, the family physician and the general practitioner is the key man in the prevention of cancer. He mentioned the question of postnatal treatment of cervical erosions and things of that kind. Of course that can be broadened into almost any field in which the general practitioner goes, and it is through him that we will be able to prevent a large number of cases of cancer.

The only thought that I would like to leave for you to take home is this: That those of us who do the general practice of medicine are the key men in solving the cancer problem, and when we can bring ourselves to realize that in us largely lies the hope of early cure of cancer, then I think we will be able to save a great many more people from cancer in North Carolina. (Applause)

Chairman Holmes: Dr. Nash's paper is now open for general discussion.

Dr. J. M. Northington (Charlotte): Mr. President, through no fault of mine, certain factors over which I had no control prevented me from hearing all of this paper. I would have liked to have heard it all. I made up my mind to hear it all.

I heard this discussion and therefore I know that Dr. Nash dealt with the cancer phase. The trend in cancer study in the past few years has been toward recognition of the fact that was realized very thoroughly seventy-five or one hundred years ago, and which has been rather pooh-poohed up to a few years ago—in the interval from a period of forty years ago—that heredity is the chief factor in determining whether or not a man will die of cancer.

I don't think any thoughtful person will deny today that that is the truth. I believe that it is well to emphasize attention to chronic sores or lumps, those that appear and do not disappear, but to emphasize still further the necessity of paying much more attention to these things in families in which it can be ascertained that a mother, a grandmother or aunt or one or more others of the family have died of cancer.

There is no doubt whatsoever in my mind that the chief thing that decides whether in a certain group there will be a number of deaths from cancer is not the early attention it receives, important as that is, but the fact as to whether or not there is strong hereditary tendency to cancer. That becomes a factor in preventing disease, preventing unnecessary death, preventing premature death—the periodical health examination. I think that cancer campaigns not only have a good effect, but a bad effect. They cause people to pay too much attention to cancer, and make a great many persons become cancer phobes.

Everybody in general practice, everybody who does specialized cancer work—which I do not—sees a number of women who have a notion that they have cancer, as well as some men, and that opinion cannot be dislodged. They go from place to place seeking somebody who will confirm that opinion. I think those persons are more unfortunate than those who really have cancer.

So I would say that it would be entirely right and proper and do more good than harm—much more good—to have those persons in whose ancestry there is a strong cancer tendency, periodically examined. But I do not believe that periodic examination in the general population would do more good than harm. (Applause)

Chairman Holmes: Is there any further discussion of this paper? If not, I will ask Dr. Nash to close the discussion.

Dr. Nash: I am very appreciative of the kind attention and the kind discussion that Dr. Brewer and Dr. Northington gave my paper.

But, gentlemen, you are the men who can prevent cancer, cure cancer, lower the mortality. You and I can. Early diagnosis, prompt extirpation of it—that is the only way you can do it. Unless it is thoroughly eradicated they cannot get well; they will die.

I thank you! (Applause)

Chairman Holmes: The next paper on our program this afternoon is "A Word for the Practical in Medicine" by Dr. James M. Northington of Charlotte.

Dr. James M. Northington (Charlotte): Mr. Chairman and Gentlemen: I will confine myself strictly to the manuscript.

. . . Dr. Northington then presented his prepared paper. . . (Applause)

A WORD FOR THE PRACTICAL IN MEDICINE

By Jas. M. Northington, M.D., Charlotte, N. C.

The great Jewish Prime Minister of Britain said that practical men are men who practice the mistakes of their ancestors; but the politicians do not aim at consistency, as illustrated by Senator L. S. Overman protesting that no candidate should be held accountable for what he says in a political campaign—and it is to be remembered that politicians are campaigning all the time. We frequently hear it absurdly said of some idea that theoretically it is good but it's not practical; when a moment's consideration of the fact that practice is theory at work reveals the absurdity of any such statement. If it can not be made to work, the theory is wrong. I wish to bring up some points in medical practice which appear to have practical importance and to be based on a sound theory. The theory is broad and comprehends not only the medical, but I believe almost every other, aspect of life. It is that our immediate aim in any given case should be the *reasonably satisfactory, rather than the best.*

A lot of frothy stuff is spoken and written about how every sick person is entitled to the best. Without going into the intricacies involved in the question as to what do *entitle* and *best* mean, we may as well face the fact that the supply of the best of anything is too limited to meet the demands of more than a very small number of persons. Generally, also—although price is by no means an accurate criterion of value—the scarcity of the best places it beyond the reach of all but a very few purses.

Most of us accept without demur and are contented with reasonably satisfactory medical care; and when circumstances make it desirable that a case be taken care of in a hospital, reasonably satisfactory equipment and attention is, in the vast majority of instances, all that *is desired* and all that the family will *purchase;* but, too often, not all they can *be sold.* Sales-resistance in general is weak in the vast majority: resistance to "Of course you want the best" for a sick or dead person is well-nigh nonexistent, and relatives should be protected and fortified against such insidious attack.

Anything and everything bearing on his patient's health recovery comes within the scope of the doctor's business; therefore keeping down every item of the expense of illness is the doctor's concern, for many an illness is prolonged by anxiety about mounting debt, and in many another this anxious worry is the final factor that brings the disease to a fatal issue.

We live in an age of slogans. To a bromidic quotation of "Man can not live by bread alone," a bright and bored gentleman replied, "No, in North Carolina we just must have aphorisms." Most of these aphorisms are more false than true: many are silly, *e.g.,* "The customer is always right"; but, somehow, the vast majority of us accept as true anything we hear repeated two or three times; so it comes about that, "You get what

you pay for," "Health is the greatest thing in the world," and "The place for a sick man is in a hospital" pass glibly from tongue to tongue, with scarce a one to question. On serious analysis, though, how much of fact is to be found in these statements? As the miner would ask, "How do they assay?" No one of these statements is true. Everybody knows that oftentimes one gets less, that now and then he gets more, and that it's very seldom that he gets just what he pays for.

One hears education, home, electricity, water, the heat of the sun, Mother Earth, memory and dozens of lesser things—to say nothing of charity, character and mother-love—proclaimed as "the greatest thing in the world." I have heard even life-insurance and plumbing so proclaimed! Superlatives—purple adjectives—have little place in language; almost none in a doctor's language; and doctors would do well to be on constant guard against being beguiled by others' use of them.

Under any but very extraordinary circumstances the place for most sick men who have beds is in their own beds, and the great majority can be adequately treated by their own family doctors.

The World War influenza epidemic, the scarcity of civilian doctors and the great abundance of money made circumstances far from ordinary. Then a number of sick greatly in excess of normal had to be cared for by a number of doctors far below the normal, and money was abundant. Putting patients into hospitals economized on the item of medical care which was scarcest. Average conditions are rather the reverse: present conditions quite the reverse. Now there is no more than the to-be-expected amount of sickness; the doctors in government employ who would ordinarily be in private practice are occupied mostly with those who should be private patients, thus reducing considerably the number to be administered to by the private practitioners: and many *can not* possibly pay for hospital care, while the number who *can not afford* to pay for it is enormous. But expensive habits are hard to break and people who have been taught, under these extraordinary circumstances, by their doctors that "the place for a sick person is in a hospital," even that "it's a life-and-death matter," are hard to unteach when circumstances return to normal and below normal. Nice discrimination is among the highest of the powers of the mind. A good many doctors, apparently, take no note of the changed conditions when advising their patients. A few months ago a man who had never been a patient of mine, but for whom I had had a chance to do a favor, came to me in distress. He had an anal fissure and an excellent gentleman and surgeon had told him to "go on over to the hospital; I'll 'phone and give the necessary orders, and I'll come over in the morning and fix you up." And, almost in tears, this father of a large family on small wages said to me, "Doctor, I can not possibly spare more than $10.00 for the whole job"; and I knew he couldn't spare that. I told him to go and tell the surgeon just what he had told me; and if he did not arrange to do the work in his office and dress his wound as long as neces-

sary for the sum he named, to come back and I would see that it was taken care of by some one else. Everything went off smoothly.

This surgeon is a good surgeon, and he is one of the best and kindest men I know: he just followed the habit that he got into during the fat years, when there were more demands on his time than could be met and when everybody's pockets were bulging.

The foreign medical journals, particularly the British, carry many articles which show solicitude about the expense of sickness. It is no uncommon thing to find a statement that a certain article is usually employed, but a certain other article is just as good and costs less. With the exception of information that certain drugs may be had more cheaply under their chemical names than under names that are copyrighted, if such statements appear in our own journals they escape my notice—and I am on the lookout for them.

We are too prone to prescribe well-touted drugs of unproved value and of which everything is uncertain except their exorbitant price. This is poor practice among the wealthy: it is a serious wrong in cases in which the cost of a day's supply of the drug consumes a large part of the daily wage of the family.

In many instances what is, on its face, the second or third best is really the best; for to many a sick man the distress of accumulating debts which he can see no way of paying, even by depriving his family of the ordinary necessities of life, will weigh more against his recovery than the more-or-less hypothetical advantage of "the best" treatment will weigh in favor of recovery.

The highly trained nurse is one of the finest products of the past century. Under favorable circumstances her services in illness are invaluable. But the family on average income can not pay for the services of a registered nurse through an illness of any considerable length; and in many, perhaps most, homes other help can be of more practical usefulness in sickness.

Many a patient and many a friend tells about going to such a place and having "a complete examination." Some doctors allege that they make a complete examination at every first visit. I wonder what they mean by *complete.* If one of you has what appears to be an ordinary headache it is highly improbable that you will do more than take a dose of aspirin and, if you have the opportunity, lie down for a while in a dark room. If your headache is persistent or recurs frequently, in the absence of manifest cause, you will go to a doctor expecting him to examine into your case sufficiently to reasonably satisfy himself that the cause is found; not that you be given a routine or complete examination, or be "put through the mill." No one in his senses will deny that if every person who consults a doctor were subjected to a minutely detailed examination supplemented by "scopic" investigations through all the external orifices and thorough x-ray and electrocardiographic investigation; and his urine,

feces, gastric juice, blood, sputum, spinal fluid and discharges examined chemically, microscopically and culturally, some disease would be discovered that now remains undiscovered: but there are not enough doctors in the world to do all this; there is not enough money to pay for all this; and patients in general have too much sense to submit to it. As it is, a lot of them are being driven to cultists by over-examination. They are made uncomfortable by reasoning that something very serious must be wrong to require all this investigation, and they flee. A great many remain with us, taking their examination-induced phobias from one doctor to another. There is a tale told in Charlotte which has a bearing on some of this. A patient on the table awaiting operation under spinal anesthesia, asked where his surgeon was, and getting the reply, "He will be in in a minute; he always says a word of prayer before he operates"; the patient sprang from the table, demanded his clothes and announced that if it was all that serious he was going on home—and he did.

When a patient tells you he has an ague, burning fever and drenching sweat every other day and feels pretty well on the alternate days, how much more do you know after finding the malaria organisms in the blood than you knew before? And in what way is your treatment influenced by whether or not the organisms are found?

Two or three years ago a radiologist friend gave me a glowing account of the efficacy of the x-rays in treating boils. I told him I did not doubt that it was the *best* treatment, meaning that it would effect cure most promptly and least painfully; but I added the opinion that if a doctor practicing medicine in a village near Charlotte were to attempt to refer to a radiologist every patient who came to him because of boils he would make of himself a laughing-stock. Naturally, people would ask, if he can't treat boils, what can he treat? what's he good for?—and in just a little while he would have moved on, or his wife would be taking in boarders, according to whether he could learn how broad a meaning the word *best* has. For the village to lose the care that can be given by no one but a doctor who lives right there is too high a price to be paid for getting boils well in a few days less time.

It is of great practical importance that doctors exercise political influence and that they collect more of their fees than they are now collecting. A communication from Dr. W. C. Bostic, of Forest City, recalls and emphasizes an idea I have long had bearing on both political action and collections. Through Dr. Bostic's initiative it has been:

"*Resolved,* that the Rutherford County Medical Society and the Rutherford County Club favor the present schedule of license fees for automobiles for the State of North Carolina. That twenty-five per cent of the fees collected for automobile license plates be used to furnish insurance to cover liabilities for each and every automobile licensed by the State.

"The amount of insurance to be applied on personal injuries, medical and hospital treatment and to the repair of damage to automobiles and other vehicles and property.

"That this body in session furnish our Representative and Senator with copies of the resolution urging them to see that same is enacted into law at once.

"That each and every member write or wire their endorsement of this measure and in every way urge the passage of such a bill in the present Legislature.

"The State may purchase this insurance to be furnished the owners of automobiles from reliable insurance companies at a very low rate; but if not able to purchase it at a very low rate then the State should create a company to handle this insurance and also other insurance needed to cover other State-controlled institutions."

At first glance my thought was that, inasmuch as the adoption of the plan would place us at the mercy of the insurance companies, it would be necessary that the State do its own insuring; on reading further it was seen that this was provided in the resolution. Wisely, this provision is extended to all insurance purchased by the State. The stock argument of the insurance agent is that you can not afford to carry your own risk, but his company can because of the volume of business. The State has the volume of business.

Going back to the automobile liability insurance, if there is any such thing as coöperation between different groups of employees of the State, it is reasonable to suppose that there will be some effort made to enforce the laws against dangerous driving when it is known that every wreck costs everybody in the State something.

I hope this Section and this Society will take favorable action on this measure and that every doctor in the State will back up the Society by exercising his individual influence.

In the medical journal of this State there have been carried in recent years two excellent articles by Dr. Alfred Worcester, of Harvard, on, respectively, "The Care of the Dying" and "The Care of the Dead." The demand for reprints of the former article has been greater than for any other thing published under the present management of the journal, and the second is worthy of the same popularity and of adoption as a rule and guide. There Dr. Worcester speaks convincingly of the unreasonableness of attempting to prevent or delay the return of the dead human body to its original dust. Pathetic, futile, expensive attempts to accomplish an end undesirable to society; and, did relatives but know themselves, undesired by them! It is well within the scope of a doctor's duty to inculcate these truths, to fortify the bereaved against the wiles of the undertaker and against their own vanity, and to exert his influence against the vulgarity of ostentation in disposing of the dead.

The fact that each of us can arrange for decent disposal of his own remains by cremation at a *total and final* cost of no more than $100.00 has already interested many doctors in the State. My own insurance is made payable to my family, not to an undertaker.

I realize, gentlemen, that to advise a patient is one thing and to get him to accept and follow advice is quite another; that although you may know that you can take care of a patient at low cost and reasonably well, he may elect expensive examinations and consultations and refuse to be dissuaded; that some will demand the most expensive room in the hospital and keep it filled with hothouse flowers, when a ward bed and yard blossoms would be much more in order; that a few revel in being examined by the hour, in telling how thorough the doctor was and in lugging around 100-page clinic and hospital records of what has been found out about and done to them. I am asking only that your influence be exerted on the side of discrimination.

I realize that a few doctors are prone to examine their patients too little, to ask some questions and write a prescription. All of us see patients die—*e.g.*, of cancer of the larynx or rectum—who would have lived years longer if they had been examined when they first made complaint to their doctors. But you are being constantly warned about going to this extreme, while seldom is a voice raised against going to the other.

Of necessity and because of a time limit imposed for your protection, I leave much unsaid. I trust I have not thrown away the child and saved the afterbirth.

Scores of practical points that might well have been included will occur to each of you. I trust many will be brought out in the discussion.

It is said that the famous Dutch painter, Van Dyck, was once asked: "How do you mix your paints." Van Dyck, as I have recently learned, was married to the daughter of the Scottish physician, Dr. Patrick Ruthven. I like to regard the possibility that the doctor influenced the artist to reply as he did: "With reason, sir."

DISCUSSION

Chairman Holmes: I know we all enjoyed Dr. Northington's interesting paper. I will ask Dr. Bostic to open the discussion. Is Dr. Bostic in the room?

If not, the paper is open for general discussion. I will be glad to hear from any of you.

Dr. H. B. Haywood (Raleigh): Mr. Chairman, I would just like to ask one question: Whether the doctor thinks that a complete yearly physical examination is an unnecessary expense. By complete I mean a routine examination of the blood, of the urine, and a complete examination of the body, including exploration of all of the orifices that can be done without special instruments.

CHAIRMAN HOLMES: Is there any further discussion of Dr. Northington's paper?

If not, we will ask Dr. Northington to close the discussion.

DR. NORTHINGTON: Mr. Chairman, with reference to this question: It would involve a great deal of the answer that the painter made to the inquiry, "With reason."

I believe it would be an excellent thing if doctors could induce all of their patients to come in, say on a birthday for an examination, with this proviso: That a great deal of discrimination be exercised as to whether a condition found is pathological or merely abnormal.

Nearly always—with the exception of cancer in certain areas, particularly the stomach—when something begins to go wrong a man feels bad. He doesn't feel in his accustomed health. There is a red light flashed on the board. Undoubtedly a great deal of unnecessary unhappiness has been caused by the finding of an abnormality which is not a pathological condition. Usually I believe the terms are used as synonyms.

An extreme illustration of the fact that abnormality is not pathology, but a quite different thing, is the fact that a good many persons have one brown eye and one blue eye, a thing which is decidedly abnormal. "Normal" means "rule," but I dare say no enthusiast would recommend that somebody try to make the brown eye blue or the blue eye brown.

So it is when finding a report once in a while that the heart is slightly enlarged. Well, as long as that man isn't complaining, is there any definite rule—does anybody know exactly what size heart a man should have? I don't know.

We see constantly—compare them right now—people who have different size feet, different size ears, different widths of shoulders, different size heads, different shaped heads. Is that pathologic? Or is it merely abnormal? What is the normal? What shall we take as a criterion?

Undoubtedly there has been much unhappiness created in this way. I can cite a number of cases—one in point, that of a man who was examined, in this case not as a routine health examination, but he was examined by an insurance company. The report went in that he had glycosuria, that he had diabetes. He was under treatment for diabetes for several years on the insufficient evidence of a copper reduction test. He was put to a great deal of inconvenience; he was put to a good deal of expense and he was unnecessarily alarmed.

Eventually it turned out that the copper reducing agent in his urine was not sugar at all but a very unusual ingredient which in no way indicated that he was ill. That is, as I say an extreme illustration of some abnormality that will be found and misinterpreted as an indication of disease.

A great many unusual features about the heart will be found, a great many murmurs, or irregularities, and to too many an unusual sound over the heart is interpreted and explained to the patient as a leaky heart or a leaky valve. The vast majority of those patients are never the same thereafter. It is a very deep question and a hard question to solve. It can't be solved by rule of thumb. I think it is probably just about a fifty-fifty thing—just about as much harm would be done by a periodic health examination as good.

Furthermore, it is highly improbable that people generally are going to have it done anyhow. So it is largely an academic question.

There are just two more points I wish to mention in connection with this: The treatment of tuberculosis in the home is something that I never do hear anybody discuss. I have a little book on the subject written by a practical man in New York and I read it once in a while. It is perfectly plain to everybody, I believe, who will think about it a moment that the vast majority of persons who have tuberculosis must be treated in the home, if at all, because there are certainly not enough hospital beds for them.

In utter disregard of that fact, over and over again, immediately after the diagnosis is made you will say, "The patient should be in a sanatorium." I have no doubt that that is true: He should be. But if there is no sanatorium bed for him, he can't get it. Why not deal with that fact as a practical problem, that this patient must be taken care of outside the hospital and in the home, and tell us how to do it? Give us information as to how we can give this second-best treatment, since the first-best is manifestly not within the realm of possibility.

And the same applies to obstetrical deliveries in the home.

Thank you very much! (Applause)

Chairman Holmes: I understand that Dr. Taylor is unable to be here and that Dr. Fox will present his paper.

Dr. N. A. Fox (Greensboro): Personally, I am very sorry that Dr. Taylor was not able to be here to present the paper covering his own work on this particular condition and subject, and also for the sake of discussion, but I shall try to present his paper as best I can, of course, and of course will be glad to re-read any part that I might misplace emphasis on.

. . . Dr. Taylor's prepared paper was read by Dr. Fox. . . (Applause)

MALIGNANT NEUTROPENIA

By J. T. Taylor, M.D., and A. J. Tannenbaum, M.D.,
Greensboro, N. C.

Malignant Neutropenia, a relatively new disease entity, had its origin in the writings of Schultz in 1932. His original descriptions of the signs and symptoms of what he called "agranulocytic angina" have been modi-

fied but little. Our increase in knowledge has been due to the increased amount of laboratory procedures, as for instance having complete blood examinations—urinalyses and Wassermanns made a routine procedure on all hospitalized cases.

Since Schultz's description of his complete agranulocytic state we have found that there occur cyclical leucopenic states in which the granulocytic phase of the blood picture is depressed. Some such cases, after having been followed along for months or even years, have finally entered into a state of complete disappearance of granulocytes—at this time falling into Schultz's group.

The pathologists have been of most benefit in aiding us in our search for the causative factor in this disease. They have led us at the present day to believe that there perhaps occurs a severe toxic injury to bone marrow function with a selective affinity to that portion concerned with the production of neutrophilic cells.

It is found that in the early stages of the disease (agranulocytosis) the bone marrow biopsy reveals an extremely cellular type of marrow which is interpreted as perhaps a proliferative response to some extremely irritating substance. The cellular response is a myelocytic one and whose longevity is considerably decreased from the normal so much so that toward the end of the disease, which only lasts but a few days, the elements of cellular degeneration such as pyknotic nuclei and disintegrated cytoplasm become evident in the bone marrow biopsy.

It becomes evident, therefore, that as the disease progresses the precursors to the mature polymorphonuclear leukocyte gradually disappear, with this occurrence in the bone marrow it becomes easy to apprehend the picture as seen in a smear of peripheral blood.

The megakaryocytes have revealed no specificity for either proliferation or depression as has also the erythropoietic tissue although frequent depressions have been also noted in the phases.

The etiology remains obscure: however, as we continue in our search we are frequently led to believe that perhaps we are dealing with some toxic element or some bacteriological element yet unknown to us. Could it possibly be some endocrinopathy since we have found neutropenias frequently associated with menstruation: or are we dealing with a constitutional inferior bone marrow on a basis of heredity? As yet we are unable to say. It may well be a combination of all of these. The bacteria recovered from the blood stream and locally involved areas may well be the result of a loss of defense reaction present in the absence of the neutrophilic cells.

Certain drugs have been accused, and justly so, of having a direct bearing on the etiology of the disease; some of the following are most prominent: arsphenamine, amidopyrine, and various compounds with the benzene ring.

In regard to the clinical picture of the complete neutropenic state there is the necrotizing infection of the gums and pharynx. It was this clinical sign to which Schultz gave the original name of "agranulocytic angina." This clinical state is ushered in by chills and fever and various degrees of prostration, some time stuporous or semicomatose. Physical examination reveals the mouth and throat diffusely hyperemic with scattered patches of dirty gray diphtheritic membrane over the gums, tonsils and posterior pharynx. The remainder of the physical examination is essentially negative. All other findings such as blood stream infection and jaundice which are sometimes described as part of this disease entity we believe merely to be due to secondary invasion. It is of differential importance to realize that there is no splenomegaly or general glandular enlargement. With such a clinical and a complete agranulocytic leukopenic blood picture, a hasty sepsis and death soon overtake the patient unless by some miraculous method a new group of granulocytic cells are hastened into the blood streams, occasionally it has been noticed that with the onset of sepsis the bone marrow resumed its myelocytic activity evidenced by the sudden appearance of young and band forms of granulocytic series in addition to many myelocytes. Without such an occurrence sepsis dies a perfect job. The inevitable blood stream infection occurs: necrosis, gangrene, hemorrhage, intestinal ulceration, viceral abscesses, broncho-pneumonia and circulatory failure follow in hasty suit.

In considering the diagnosis, acute aleukemic leukemia may offer considerable difficulty. However, in face of the marked anemia, hemorrhagic diatheses and presence of lymphoblasts and myeloblasts, the differentiation is apparent. Aplastic anemia carries with it a profound anemia and thrombocytopenia in addition to the hemorrhagic manifestations. Infectious mononucleosis is considerably more benign and at some stage will produce a definite leukocytosis. Diphtheria can be easily ruled out by a throat culture.

As to the treatment of the disease the literature overwhelms us with success attained by various types of therapy. It is apparent that improper diagnosis has been the greatest stumbling block in a search for the proper treatment. Many men just as Bonsdorff have reported cures.

On investigation his two cases were found to be (1) Pernicious anemia, (2) Extreme leukopenia due to novarsenobenzol and bismuth.

Foreign protein therapy once advocated has now been proved to be of no value in these cases. X-rays have been shown to depress the bone marrow still further. Blood transfusions have been shown to be only of a transient aid, to be followed by a still greater drop in leukocytic count. Liver extract has yielded no results in properly diagnosed cases. The one substance which has yielded results of a gratifying nature is the pentonucleotide. Introduced as a therapeutic measure, it has had only one severe drawback, namely that of administration of insufficient dosage.

Jackson recommends an intramuscular injection of forty c.c. each day of the pentonucleotide, starting of course with smaller doses to avoid any

systemic reactions. This, together with good nursing care and ample sedation, is all we can offer such a patient at the present time.

The following is a case of complete agranulocytosis which illustrates all the cardinal points of the disease.

Mrs. C. F., housewife, age 40. Complaining of headache, sore throat and exhaustion.

Family History: Non-contributory.

Past History: States she has always been delicate. Had the usual diseases of childhood from which her recovery was slow. At the age of 17 years had an operation for female trouble (dysmenorrhea). Fifteen years ago had right nephropexy and appendectomy. 1926—Had perineorraphy and trachelorraphy. 1937—Had tonsillectomy. 1930—Was treated for pellagra—(sore mouth, weakness, nervousness and diarrhea) no skin eruption. For the past three years has not felt well, has been weak and unable to attend household duties. At each menstrual period she would suffer more pain and become weaker. During the last three periods she has had chills and fever requiring rest in bed for 3 to 10 days. Has been treated during the past three years for trench mouth.

Present Illness: On May 26th complained of sore mouth accompanied by chill and high temperature. She was taken to dentist following day who diagnosed the condition as trench mouth. She continued to grow worse. There was soreness at angle of jaws and extended down neck. Seen the following day by physician who concurred in the above diagnosis. The next day another physician was called and suggested the trouble was due to a stomach disorder.

On May 31st she was seen by the third physician and was told her condition was serious, that she should be hospitalized, which advice she refused to accept. Two days later patient was seen in consultation at her home. She was an extremely sick woman and immediately hospitalization was advised. Patient was brought to the hospital the following morning at 10:30.

The records of previous hospital admissions were reviewed. There was no record of blood examination except in the two admissions in 1927 when tonsillectomy was performed—at which time the records showed R.B.C. 3,900,000, Hbg. 60%, W.B.C. 4,200; no differential was recorded. In 1930, when treated for pellagra, the count was: R.B.C. 2,900,000, Hbg. 60%, W.B.C. 4,000, Polys. 48%.

Physical Examination: General condition very bad. Patient is depressed and responds slowly; she is unable to speak plainly because of pain. She is thin, emaciated, and too weak to sit erect. Eyes: Sclerae slightly icteric. Pupils are round, regular and equal, react to light and accommodation. Mouth: The tongue is dry and coated, protrudes in midline. Gums are swollen and hyperemic, some areas resemble beginning gangrene. Tonsils are removed; both anterior and posterior pillars show peculiar bluish discoloration with grayish membranous deposits extending

up over soft palate and posterior pharynx. There is marked tenderness about angle of jaws with slight cervical glandular enlargement. Thyroid: not enlarged, no stiffness, or rigidity of neck. Chest: flat, respirations shallow and difficult. There are course and moderate course rales heard at the base of both lungs. Heart is apparently normal in size and position. Rate 130. Rhythm, regular. B.P. S. 90, D. 40. Temp. 104. Abdomen: flat, markedly tender. Liver and spleen easily palpable and extremely tender. Pelvis: there is ulcerated area between the vagina and rectum; also, ulceration just inside the vagina extending well into posterior wall. The mucous membrane is greatly congested and hyperemic. Extremities: upper, slight tremor, no clubbing, marked cyanosis; lower exteremities, no edema. Urinalysis: negative, except occasional W.B.C. and granular cast on one occasion.

Laboratory Findings: June 3, 1931—R.B.C. 3,270,000, Hbg. 37%, W.B.C. 2,350. Large M-4%, S. Mon-96%. June 4, 1931—R.B.C. 3,000,000, Hbg. 37%, W.B.C. 3,200. June 4, 1931—R.B.C. 3,000,000, Hbg. 37%, W.B.C. 3,200. L.M. 4%, S.M. 96%. June 5, 1931—W.B.C. 2,100, L-2, S.M. 98%. June 6, 1931—W.B.C. 1,600, 100% S.M. June 6, 1931 p.m.—W.B.C. 800, 100% S.M. June 7, 1931—W.B.C. 400, 100% S.M. June 3—Smear from throat: many pus and epithelial cells; bacteria; no Vincent's observed. Culture: shows streptococcus, predominating.

Course while in hospital: June 3, 1931 p.m.—Patient had a comfortable day; has taken fluids well and is apparently improved; 300 c.c. citrate blood given; no reaction. June 4—Patient states she feels better than at any time since illness began. Mouth is apparently better and not so painful. T-100, P-90, Resp. 20, W.B.C. 3,200; no polys present.

June 5—Patient doesn't look so well though temperature has reached 98° at 4:00 A.M., 99° F. at present (9 a.m.). Skin is becoming jaundiced —definitely icteric, oral lesions not improved, apparent sloughing beginning about lower molars.

June 6—Patient is gradually growing worse. T-102, P-125, R-20. Jaundice marked. Active sloughing taking place. Dentist removed sloughing tissue from about gums.

June 7—Condition much worse; definite pneumonic areas in both lungs; patient cyanosed; R-38, P-140, T-102; marked jaundice; marked sloughing of gums and anterior tonsillar pillar.

June 8, 1931, 6:30 a.m.—Patient expired suddenly after a fair night's rest; apparently a cardiac death.

Treatment: Supportive measures were instituted. A transfusion—300 c.c. citrated blood, was given upon admission: quinine sulphate, grs. 10, t. i. d. Typhoid vaccine, ½ c.c. second day after admission. Fluids were forced—glucose given intravenously—50 c.c. 50% solution daily.

Comment: This case is presented with several thoughts in mind. From the past history, one would wonder: First, what bearing some endocrine disturbance might have had upon the development of this condition or vice

versa. What influence this condition if existing for a long period might have had upon the menstrual disturbances. Wasn't the poor health of this lady due to the recurrent cyclical attacks of leucopenia, which has been so well described by Rutlege, Hansen and Thayer?

Is this condition a clinical entity or is it the terminal event of some inter-current infection which so far we have not been able to detect?

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DISCUSSION

Dr. Jas. H. McNeill (North Wilkesboro): I haven't seen many of these cases, in fact I don't remember seeing more than one, but I have seen a series of cases reported, particularly by Dr. Murphy in Boston, at the Peter Brent Brigham Hospital, in which he claims to get excellent results by the use of liver extract. I would really like to hear the opinion of other men on this one factor.

I notice that the writer states that liver extract has been of no value, but Murphy is a man who is not to be sneezed at. He is a good man; and if he says you are benefited by liver I would be inclined to believe him.

Chairman Holmes: Is there any other discussion?

Dr. Walter R. Johnson (Asheville): In reference to therapy, it is perfectly true that most of the reports in the literature have spoken rather highly of the use of Pentonucleotide, and it seems to be the most satisfactory substance that we have at the present time in these conditions. However, Watkins has used a substance which he calls fetal bone marrow, and this extract is given orally. His results are quite satisfying to him at any rate. He thinks that it is more effective than the Pentonucleotide.

Murphy, it is true, feels that liver extract is very efficacious and advises its use. As far as the fetal bone marow is concerned, I have had a woman under observation for a few months who has run a low white blood count for a number of years. It usually runs in the neighborhood of 4,000 with from fifty to sixty per cent lymphocytes. At times, rather frequently during the year, she has prostrating attacks of sinusitis, sore throat, or one type or another of upper respiratory infection. These infections have always been very severe in the past, have knocked her out for two or three or four weeks at a time. In the last infection, which occurred several months ago, she was given fetal bone marrow; and her statement was that almost immediately she began to feel new pep.

Previously she had been terrifically depressed, both physically and mentally, and this substance gave her a new lease on life. She continued taking it, and I saw her just the other day. She says that she is a different woman in every respect. She now has practically normal differential count. Her leucocytes, as I recall, are about 9,500, which elevation she has never reached in a period of some five or six years previously. She feels infinitely stronger and better and is better able to cope with her difficulties. (Applause)

Chairman Holmes: Is there any further discussion?

If not, I wil ask Dr. Fox to close the discussion.

Dr. Fox: Mr. Chairman, I don't profess to be able to discuss Dr. Taylor's paper in any way adequately, and would only emphasize the statement he made in reference to the therapy of the condition: That until we perhaps find a real basic cause, and either establish or deny the possible bacterial element, we may not be able to arrive at anything in the nature of a specific cure. Of course it does seem very logical that the liver extract might really do something.

There again there is the possibility that the diagnosis has been wrong. That is always to be thought of in any such condition. It is further my belief that—as in the case that he so well describes—if they get into that acute exacerbation of something that may be more or less chronic and cyclical, perhaps nothing that you can do is going to really pull them out of such a slump as that, because you noticed that all through the course of that case the blood picture a hundred per cent mononuclear leucocytes, which of course is another way of saying that there were no neutrophilic cells.

Hence, so far as we know, such a condition is incompatible from the line of recovery.

Chairman Holmes: Next on our program this afternoon is a paper by Dr. Lila Bonner Miller of Raleigh—"Breasts." (Applause)

THE YOUNG FEMALE BREAST

A Study Based on the Examination of One Thousand Single Healthy Women Between the Ages of 16 and 25.

Lila Bonner Miller, M.D., Atlanta, Ga.

Until recent years the human breast has been interesting only as a physical adornment, an early source of food or a diseased organ. There have been few comprehensive studies of the breast, such as the one made by Deaver and McFarland[1] (1918) and Cheatle and Cutler[2] (1931). Ordinarly the average physician only examined the breast when asked to do so by the patient.

Today, however, no subject is of more importance to the surgeon than the prevention and treatment of cancer of the breast. His interest here begins with pain in the breast, follows through chronic mastitis and chronic cystic mastitis to cancer of the breast. If the surgeon is to see early benign lesions and thus have an opportunity to forestall cancer, young girls need to be taught the correct care of the normal breast. Indeed, all women need to be made breast conscious to the end that they may bring early lesions to the surgeon, thus giving him a chance for a permanent cure.

No condition is more interesting to the pediatrician than the source of milk supply for the young infant. Recessed or inverted nipples spell danger to this natural source of supply and mean severe pain to the nursing mother. It would be a simple task for the physician to teach the young adult to extrude the nipples, especially since it can be done so easily at this time of life.

Of great interest to women are mysterious curves so peculiar to her sex. Since correct care is essential to beauty, women can and should be taught to put aside distorting garments for supportive garments, and to give the proper care to their breasts. A subject of even more intense interest to all women is the cause, prevention and cure of cancer. This double consideration of health and beauty will lead women to give proper care to their breasts. Their difficulty, however, is in knowing what constitutes proper care.

Because of the many interests in this subject, the need for a study of the breast of the young female seemed indicated. One thousand single, ordinarily healthy girls between the ages of 16 and 25 were examined and the findings of that study form the basis of this paper.

PROBLEM

I desired in this study to find answers to the following questions:

What are the types of breasts?
What are the most frequent types of breasts?
What is the position of the breast on the chest wall?
What are the most common sizes of breasts?

In what percentage of breasts is there pain before or during menstruation?

Does pain occur in one type of breast more frequently than in another?

Does pain occur in the large breast more frequently than in the small breast?

Does the size of the breast correspond with the height and weight of the individual?

How often are the breasts unequal in size?

Are breasts in any way affected by deodorants?

What effect have brassieres on the breast?

How often do accessory nipples occur?

In what percentage of breasts has there been previous inflammatory disturbances?

What is the frequency of tumors of the breast in one thousand healthy girls?

What constitutes correct care of the breasts?

TECHNIC

During the past three years I have examined one thousand girls between the ages of 16 and 25 in southern colleges. A careful history was taken in regard to pain in the breast in relation to the menstrual period, the use and types of brassieres, the use of deodorants, and previous diseases of the breast. In the case of each young woman the age, height and weight were recorded. She was stripped to the waist and examined while sitting erect. The breasts were classified, compared, measured, transilluminated and carefully palpated with regard to masses, tumors and axillary glands. The areolae and nipples were examined. Inspection was made for any accessory nipples.

I am indebted to Dr. R. H. Fike, Dr. Robert B. Greenough, Dr. Max Cutler and the late Dr. Burton J. Lee for opinions as to the kind of examinations most advisable and the type of record to be kept. Below is a chart carrying the type of record made in each case.

Name Age Height Weight

A. HISTORY

I. Menstrual History
1. Single
2. Age of establishment of menstrual function
3. Menstrual pain: none, mild, moderate, severe

II. Occurrence of Mastitis
1. Abscess
2. Infected nipple
3. Massage

III. Pain in the Breast
1. Age of onset
2. Duration
3. Time of occurrence as to menstrual period
4. Character
Mild
Moderate
Severe
Intermission
Tenderness
Swelling
Sensation of fulness or heaviness

IV. Brassieres
1. Number of years worn
2. Type
Loose
Supportive
Constrictive
Distortive
Corselette

V. Use of Deodorants
1. Type used
2. How often

B. PHYSICAL EXAMINATION OF BREASTS

I. Position of Breasts
Cm. from midline left b., right b.
Cm. from midaxillary line
Cm. from midclavicle

II. Size
Cm. in width
Cm. in length
Cm. in thickness

III. Apearance
Very large
Large
Medium
Small

One larger	One lower
Right	Right
Left	Left

IV. Shape of Breast
1. Flat
2. Cone
3. Ball
4. Pendulous
5. Goat udder-like

V. Areola
1. Color
2. Shape
3. Diameter
4. Scars
5. Scaliness
6. Glands

VI. Nipple
1. Shape
2. Inverted
3. Recessed but can be extruded
4. Roughness
5. Fissures
6. Discharge
Polythelia
Polymastia

C. TRANSILLUMINATION

D. PATHOLOGIC MANIFESTATIONS

I. Mass Single
1. Size
2. Location
3. Mobility of tumor
4. Involvement of skin
5. Adherence of skin
6. Pain
7. Tenderness
8. Consistency of tumor:
Axillary:

Very hard	1. Low
Firm	2. Medial
Elastic	3. Apex
Soft	4. Supraclavicular

Sharply outlined
Indefinite edges
Mobile in breast
Infiltrating
Translucent
9. Duration
10. Progress of growth
11. Regular or irregular
12. Enlargement of regional lymph node

Hard	Tender
Soft	Motility

13. Retraction of nipple

EMBRYOLOGY OF THE BREAST

A brief review of the embryology and physiology of the breast is advisable before proceeding with a study of this subject.

Jordan and Kindred[3] in their Textbook of Embryology describe the development of the mammary glands as apparent in embryos of 7 to 8 mm. (second month). This is in the form of a thickened ridge of ectoderm, the milk line, which extends between the bases of the limb buds on each side of the trunk. Of this line, normally only the pectoral portion differentiates in human beings and only a single pair of mammary glands is formed. H. Schmidt[4] found that such primordia appeared in varying

numbers upon the thorax and abdomen of human embryos although human beings normally have but two breasts. The explanation of this is found in the suppression of the superfluous primordia as the further development of the animal takes place. If the suppression of the primordia be excessive, there may be no mammary glands, giving a rare anomaly—amastia. If there be no suppression, there may be too many mammary glands, giving a more frequent anomaly—polymastia.

At the fifth month, when the hair follicles begin to form, the ectoderm in the mammary area begins to send epthelial cords down into the dermis. The stalks of these cords are the primordia of the lactiferous ducts. Each cord branches at its deeper end and forms several small lobules. During the seventh to the ninth month the lobules and cords become canalized and the lumens open into the epidermal pit. About the time of birth, the pit is raised above the surrounding epidermis to form the nipple, hence the lactiferous ducts open at the surface of the nipple.

PHYSIOLOGY OF THE BREAST

With the advent of puberty developmental changes occur in the breasts in both sexes, more marked in girls. The growth of the breast usually begins about the tenth year, gradually at first and more rapidly during the fourteenth, fifteenth and sixteenth years. The microscopic changes coincide with the external morphologic changes. Stratz[5] describes these changes as a division and extension of the glandular parenchyma beneath and beyond the areola, and a deposit of adipose tissue between the forming lobules of glandular tissue, which he calls the "Knospenbrust" or budding breast. But these changes in the breast should not be considered alone. They run parallel with the changes of the breast that occur with the preparation, advent and regression of the menstrual period.

During the examination of one thousand breasts in the young single adult, I was forced to recognize the breast as an ever active organ either in a state of proliferation or regression. In my examinations the activity of the breast during the premenstrual and menstrual season was more frequently discernible in the cone breasts and the ball breasts. In appearance they are full and turgescent; the veins are prominent. Striae, which are common in the ball type of breast, are slightly changed in color. They extend from the nipple toward the periphery and are more prominent. To touch, the breast is warm and feverish compared to the rest of the body. To the palpating hand it feels distinctly heavy. Transillumination of the breast is less clear, there being generalized cloudiness. In some cases this condition is accompanied by pain; and in others there is none.

Cheatle and Cutler[2] describe the microscopic changes of the breast in the premenstrual phase (six or seven days before the beginning of menstruation) as being a marked edema of the pericanalicular and peri-acinous connective tissue. The connective tissue fibrils show a meshed reticular arrangement. The ducts and acini are filled with cellular detritus. The membrana propia of the lumens is thin and the basal layer of the cells

swollen and vacuolated. There is moderate infiltration of the connective tissue, with lymphocytes and plasma cells. In the postmenstrual phase the pericanalicular and peri-acinous connective tissue have become thickened and more compact. The capillaries are narrowed, the glandular buds have almost entirely lost their lumens and the cellular infiltration is reduced. In the interim this progress of regression advances still further.

The domination of the ovaries over the activity of the breast has been fully established. If oöphorectomy is performed before puberty the mammary glands fail to develop. Removal of the ovaries after puberty leads to involution of the mammary glands. The implantation of ovaries into castrated animals leads to new development of the breasts. (Knauer[6], 1900; Halban[7], 1903)

The failure of the breasts to develop in women with infantile ovaries is further important evidence of the relationship between the ovaries and the breasts. This fact was confirmed by one of my cases.

Goltz and Ewald[8] found that bitches whose spinal cords were destroyed had a normal development of the breasts when they became pregnant and secreted milk in a normal fashion. Basch[9] isolated the mammary gland of a dog from all nervous connections and transplanted it to the back. When the animal became pregnant, the transplanted breast showed the usual enlargement and secreted milk at the termination of pregnancy.

The experiments of Frank and Goldberger[10] are of importance here. By means of their special blood test, they examined the blood of large numbers of normal women who were menstruating regularly, and in an overwhelming majority they demonstrated a considerable accumulation of the female sex hormone within the ten day period preceding menstruation. (This corresponds with the time of proliferation of breast tissue.) The hormone disappears abruptly with the onset of menstruation. (This time corresponds with the period of retrogression of breast tissue.)

In discussing menstruation in the light of newer knowledge, Hartman and Novak[11] make this statement, "Although corpus luteum has been found to produce the secretory phase of the endometrium, it is absolutely ineffective in relation to mammary hypertrophy and secretion." They, however, suggested that as comparative studies indicate the corpus luteum is important in the progestational phase of the endometrium, beginning where the follicle leaves off, the luteal phase of the mammary gland was also postulated.

Smith and Engle[12] in this country and Zondek and Aschheim[13] in Germany found that by repeated transplantation of the anterior pituitary lobe into immature rats, marked changes occurred in the uterus, vagina and ovary. There was a striking increase in the number of follicles and corpora lutea and ovulation is enormously accelerated. In the words of Zondek and Aschheim[13] the anterior lobe of the pituitary is the "motor of the ovary." Thus the anterior lobe of the pituitary gland in working through the ovary probably plays a prominent part in any mammary activity.

The physiology of the breast would be incompletely outlined if the contractile power of the areola and nipple was not mentioned. This contractile power is called into play by such mechanical stimulation as heat and cold, touch or nervous and sexual excitation. The extreme sensitivity of the nipple is known to every woman. The suspensory ligament of Cooper, the supporting tissue of the breast, plays a very important part in the life history of the breast. Its condition determins to some extent the protection of the acinous tissue from outside injury, and determines whether there is order or distortion within the breast.

CLASSIFICATION

The following five types of breast were noted: flat breasts, cone breasts, ball breasts, pendulous breasts and goat udder or pyramidal, breasts. These types occurred in the following percentages: flat breasts 20 per cent; cone breasts 42 per cent; ball breasts 27 per cent; pendulous breast 10 per cent, and goat udder or pyramidal breast 1 per cent.

THE FLAT BREAST

The flat breast in the young adult presents a barren outlook, nevertheless in maturity it may function abundantly. See figure 1. In regard to position of the breast on the chest wall, we find the nipple is usually situated 9 to 11 cm. from the midline and 11 to 13 cm. from the mid-axillary line. From the midclavicle the nipple is usually 18 to 31 cm.

In regard to the size of the breast, the width ranges between 19 and 24 cm.; the length ranges between 13 and 16 cm. The radius of the flat breast is usually 6 to 8 cm. The figures showing position and size of the small, medium and large flat breast when corrected for the probable deviation are shown in figure 2.

The history of pain in this type of breast is interesting. Of the group of flat breasts 70 per cent had no pain in the breast during the menstrual period, 22 per cent had mild pain, 7 per cent had moderate pain and 1 per cent had severe pain. The menstrual history in this group of cases was as follows: 90 per cent were regular, 10 per cent were irregular. With regard to dysmenorrhea, 67 per cent had no menstrual pain, 20 per cent had mild menstrual pain, 2 per cent had moderate menstrual pain, and 11 per cent had severe menstrual pain. It is noticed that the number with pain in the breast follows closely the number with menstrual pain.

The use of deodorants in the group of flat breasts is interesting. 42 per cent used no deodorant, 58 per cent used deodorants. Of this latter group 61 per cent used Odorono, 35 per cent used Mum and 4 per cent used various deodorants.

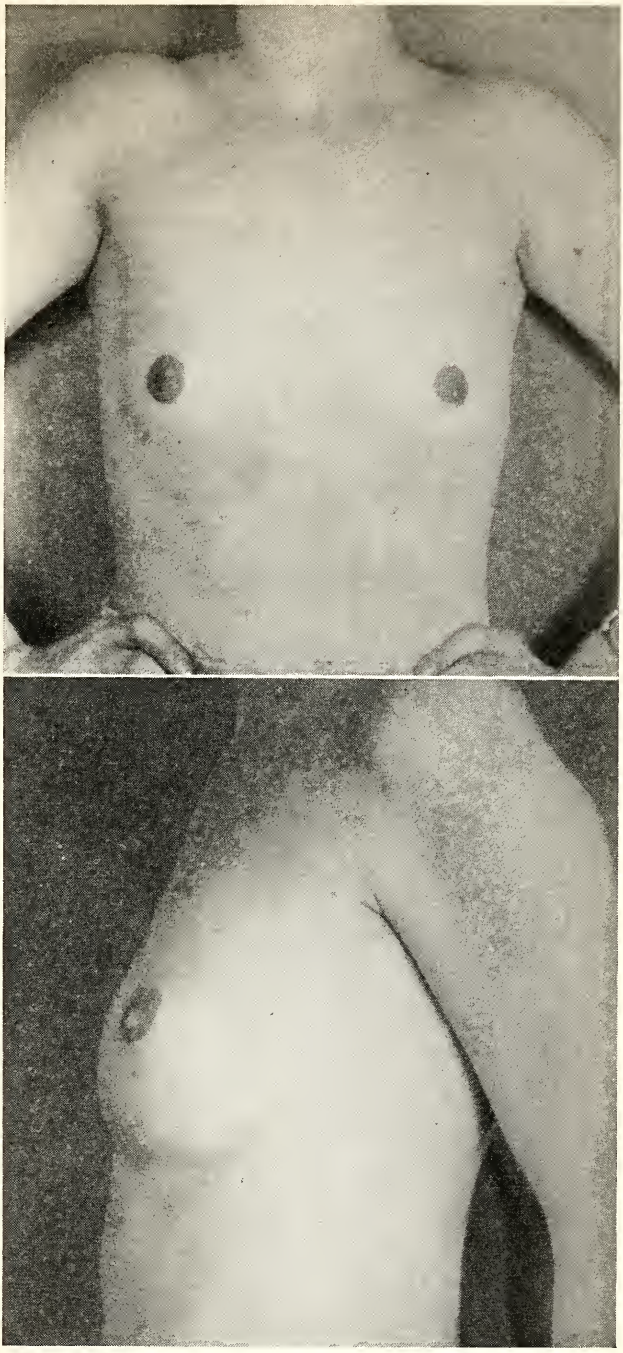

Fig. 1.—The Flat Breast

FLAT BREASTS

POSITION OF THE BREASTS

Distance	CMS. FROM MIDLINE			CMS. FROM MIDAXILLARY LINE			CMS. FROM MIDCLAVICLE		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	6 to 9	19	10.6	7 to 11	37	20.6	14 to 18	29	16.1
Medium	9 to 11	143	79.4	11 to 13	112	62.2	18 to 21	113	62.8
Large	11 to 15	18	10.0	13 to 18	31	17.2	21 to 29	38	21.1
Total		180	100.0		180	100.0		180	100.0

SIZE OF THE BREASTS

Size	CMS. IN WIDTH			CMS. IN LENGTH			CMS. IN THICKNESS		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	11 to 19	25	13.9	8 to 13	34	18.9	3 to 6	34	18.9
Medium	19 to 24	115	63.9	13 to 16	115	63.9	6 to 8	137	76.1
Large	24 to 32	40	22.2	16 to 22	31	17.2	8 to 10	9	5.0
Total		180	100.0		180	100.0		180	100.0

Fig. 2.

The brassieres worn by this group of girls, those with flat breasts, had one main characteristic; they were ill-fitting. Eleven per cent wore no brassiere, 64 per cent wore a loose brassiere that did not fit, 20 per cent wore a supportive brassiere, 2 per cent a constrictive brassiere and 3 per cent a distortive brassiere. In general among the ffat breasts examined 80 per cent had the wrong kind of a support or no support (fig. 3.).

In this group of cases it was difficult to feel any fulness or swelling in the breast during the premenstrual days. There was little or no turgescence of the breast or increase in heat to manual examination. Perhaps this was due to the small amount of breast tissue that the flat breast contains, for there was a distinct fatty, soft feeling to the palpating hand. Two cases, apparently intelligent girls, had massaged the breasts with cocoa butter to "make them grow." I was often asked the question, "What can I do to make my breasts larger?" or "How can I develop myself?"

As an interesting phenomenon, one girl twenty-one years of age had never menstruated. Her breasts were found to be infantile. There was no elevation and no breast tissue could be felt. Other secondary sexual signs such as pubic hair were absent. This follows in line with the observation that in the absence of ovarian function there is no development of the breast.

The areola was round in all cases. Its color was strawberry in 3 per cent, pink in 32 per cent, bluish in 3 per cent, brown in 53 per cent, tan in 9 per cent. As a passing observation rather than a proven fact, the strawberry nipple was the thinnest of all types of nipples. It was almost transparent. Four, five or six lactiferous ducts were easily seen opening on the surface. These strawberry colored niples are more irregular and rough than the other types of nipples. The diameter of the areola was generally 2 cm. and occasionally 3 to 4 cm. On transillumination the flat breast was clear in practically all cases. Hairs around the nipple were found in 7 per cent.

The nipple stood erect in 91 per cent of the cases. Three per cent of the nipples were inverted, 3 per cent were recessed but could be extruded. Roughness and fissures occurred in 3 per cent, 3 per cent had accessory nipples. No definite tumors were found in the flat breasts. Two moles in the skin were present.

THE CONE BREAST

The cone breast is the most common type, occurring in 420 cases of the 1,000 examined. See figure 4. The medium position on the chest wall is 9 to 12 cm. from the midline, 11 to 14 cm. from the midaxillary line, 19 to 22 cm. from the midclavicle. The variation from this position is relatively small. The medium semi-circumference which is the nearest measurement to what may be called the width of this type of breast is 21 to 26 cm. The medium length from the highest point of the breast to the nipple then to the lowest point of the breast is from 14 to 18 cm. The extreme varia-

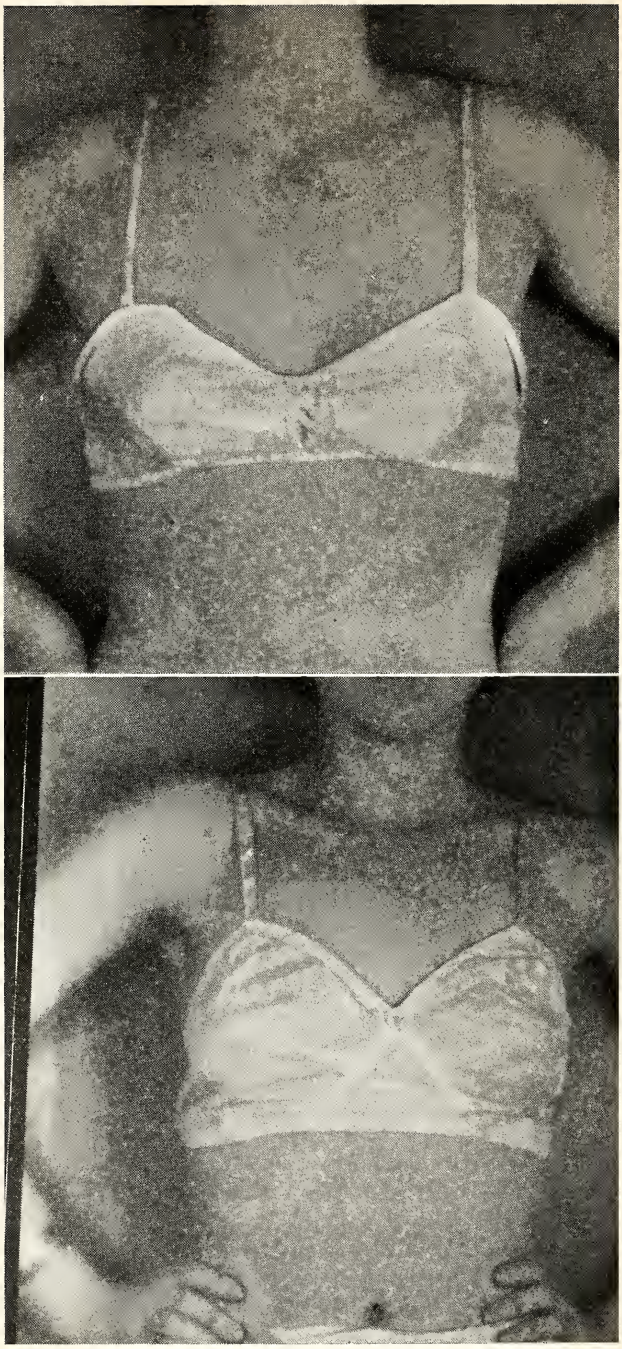

Fig. 3.—Loose Ill-fitting Brassieres

tion ranges between 11 and 33 cm. The medium thickness measured from the nipple to the lowest point of the breast is from 6 to 8 cm., varying from 4 cm. on the one extreme to 10 cm. on the other extreme. The figures found showing the position and size of the small, medium and large cone breast when corrected for probable deviation are shown in figure 5.

There is no pain in the breast in 65 per cent of the cone type during the menstrual period; mild pain in the breast in 23 per cent, moderate pain in 10 per cent; severe pain in 2 per cent. This runs parallel with the amount of menstrual pain. Of the girls with cone shaped breasts, 61 per cent had no menstrual pain; 13 per cent had mild menstrual pain; 13 per cent had moderate menstrual pain; and 13 per cent had severe menstrual pain. Ninety-one per cent of these girls had regular menstrual periods, and 9 per cent had irregular menstrual periods.

Of this group of women, 50 per cent used deodorants and 50 per cent used none. Of those that used deodorants, 62 per cent used Odorono; 31 per cent used Mum; and 7 per cent used other deodorants.

Thirteen per cent of the women with cone breasts wore no brassieres; 52 per cent wore loose brassieres with little or no care given to the fitting of them; 35 per cent wore brassieres that were well fitted and supported the breast; 4 per cent of the brassieres were constrictive and 4 per cent were distortive. Generally these women had worn brassieres four, five and six years, though some had only worn them one year and some had worn them eight years.

The study of the areolae and nipples in this class of breasts is interesting. The shape of the areolae is round, though due to stimulation from cold or some emotional stimulus this shape can be pulled into an oval by the smooth muscle present. The color varies; pink 36 per cent; strawberry 4 per cent; bluish brown 2 per cent; dark brown 1 per cent; brown 41 per cent, to tan 16 per cent. The average diameter is between 3 and 4 cm. Transillumination in this type of breast was clear in 97 per cent of the cases. Hairs were present in 4 per cent of the cases. Veins were prominent in less than 1 per cent of the cases. Striae were present in less than 1 per cent of the cases.

The nipples were excedingly interesting. Eighty-three per cent were in a quiescent state but stood up about 1 cm. above the rest of the breast. Four per cent of the breasts showed the nipple in a state of extreme erection. During the examination of the breast this erection might appear or disappear, due apparently to the nervous state of the girl. The nipples were recessed but could be extruded in 6 per cent of the breasts. Two per cent of the nipples were inverted. One per cent were rough and fissures occurred in 3 per cent of these breasts. There was a discharge from only one pair of breasts, less than 1 per cent of the cases.

The structure in general of the cone breasts was in a better state than in any other type. Occasionally, however, a line across the top of the breast was present. This evidently came from a tight brassiere.

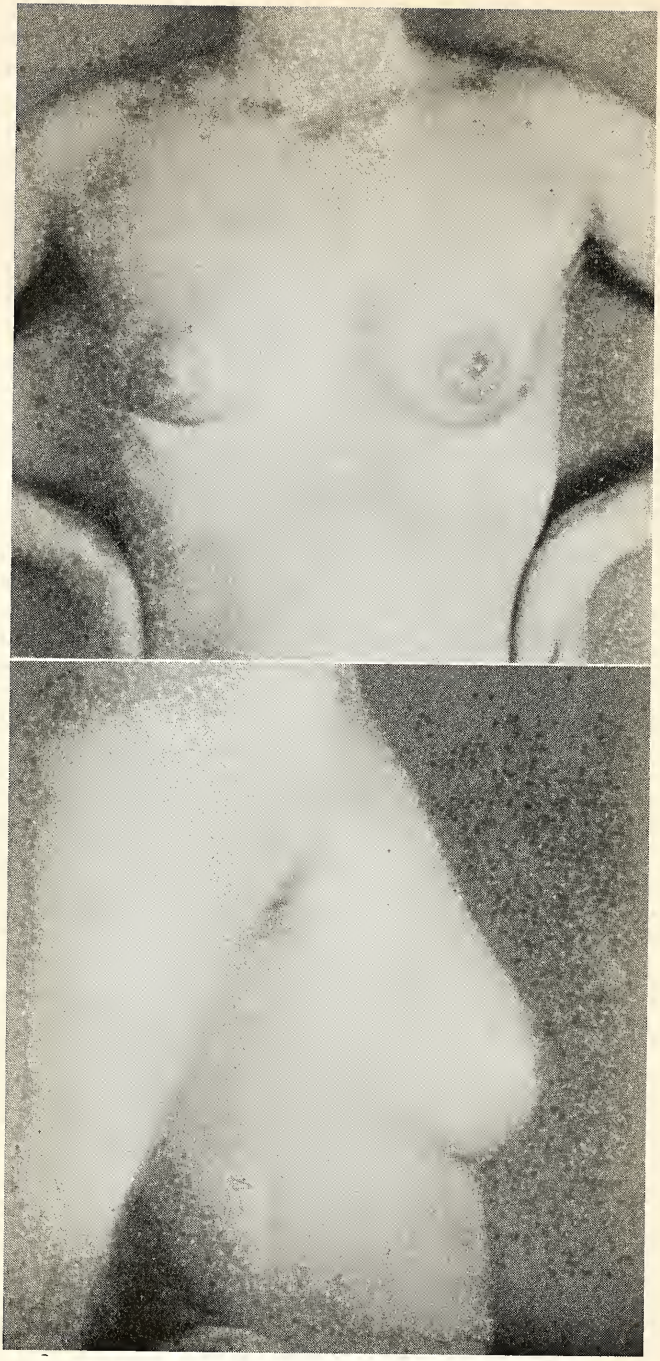

Fig. 4.—The Cone Breast

CONE BREASTS

POSITION OF THE BREASTS

	CMS. FROM MIDLINE			CMS. FROM MIDAXILLARY LINE			CMS. FROM MIDCLAVICLE		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	6 to 9	17	4.2	7 to 11	28	6.8	9 to 19	85	20.7
Medium	9 to 12	374	91.2	11 to 14	293	71.5	19 to 22	252	61.5
Large	12 to 14	19	4.6	14 to 21	89	21.7	22 to 28	73	17.8
Total		410	100.0		410	100.0		410	100.0

SIZE OF THE BREASTS

	CMS. IN SEMI-CIRCUMFERENCE			CMS. IN LENGTH			CMS. IN THICKNESS		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	13 to 21	83	20.2	11 to 14	47	11.5	4 to 6	28	6.8
Medium	21 to 26	235	57.3	14 to 18	304	74.1	6 to 8	307	74.9
Large	26 to 37	92	22.5	18 to 33	59	14.4	8 to 10	75	18.3
Total		410	100.0		410	100.0		410	100.0

Fig. 5.

Masses in the breast proper or in the skin over the breast occurred in 4 per cent of these cases. One per cent of the women with cone breasts have had mastits previously.

Identical twins appeared in this group. They were within one inch of each other in height. One girl weighed 104 and the other 109. One began to menstruate at 12 years of age, the other at 13. Both girls began to have pain in both breasts at the age of 16. This pain begins before the period and lasts from one to two days. They have worn loose brassieres six years. Both girls have painful menstruation, and have used Odorono moderately. The breasts of each girl are classified as small cone shaped with a few hairs around the nipples. The nipples were brown, round and erect; and the areolae were 4 cm. in diameter. The breast measurements are nearly the same, and are as follows:

	Left Breast	*Right Breast*
Miss A:		
Cm. from midline	10	10
Cm. from midaxillary line	11	11
Cm. from midclavicle	17	17
Cm. in width	18	18
Cm. in length	13	13
Cm. in thickness	6	6
Miss AA:		
Cm. from midline	9	9
Cm. from midaxillary line	11	11
Cm. from midclavicle	17	17
Cm. in width	17	17
Cm. in length	13	13
Cm. in thickness	6	6

The similarity of history and of physical characteristics including measurements is striking.

THE BALL BREAST

The ball breast was the second type in frequency, occurring in 27 per cent of all the girls (fig. 6.). The medium position on the chest of the ball breast is from 9 to 12 cm. from the midline; 12 to 16 cm. from the midaxillary line; and 20 to 24 cm. from the midclavicle. The medium semi-circumference is from 26 to 31 cm.; the medium length is from 17 to 21 cm.; the medium radius which is the thickness as nearly as can be measured is from 7 to 10 cm. The figures showing the position and size of the small, medium and large ball breasts, when corrected for probable deviation, are shown in figure 7.

Of the ball breasts, 74 per cent had no pain; 26 per cent had pain, most of which was mild. Pain in the breast occurred less frequently in this type of breast though the percentage of cases with menstrual pain was same as in other types. Sixty-six per cent had no menstrual pain and 34 per cent had menstrual pain.

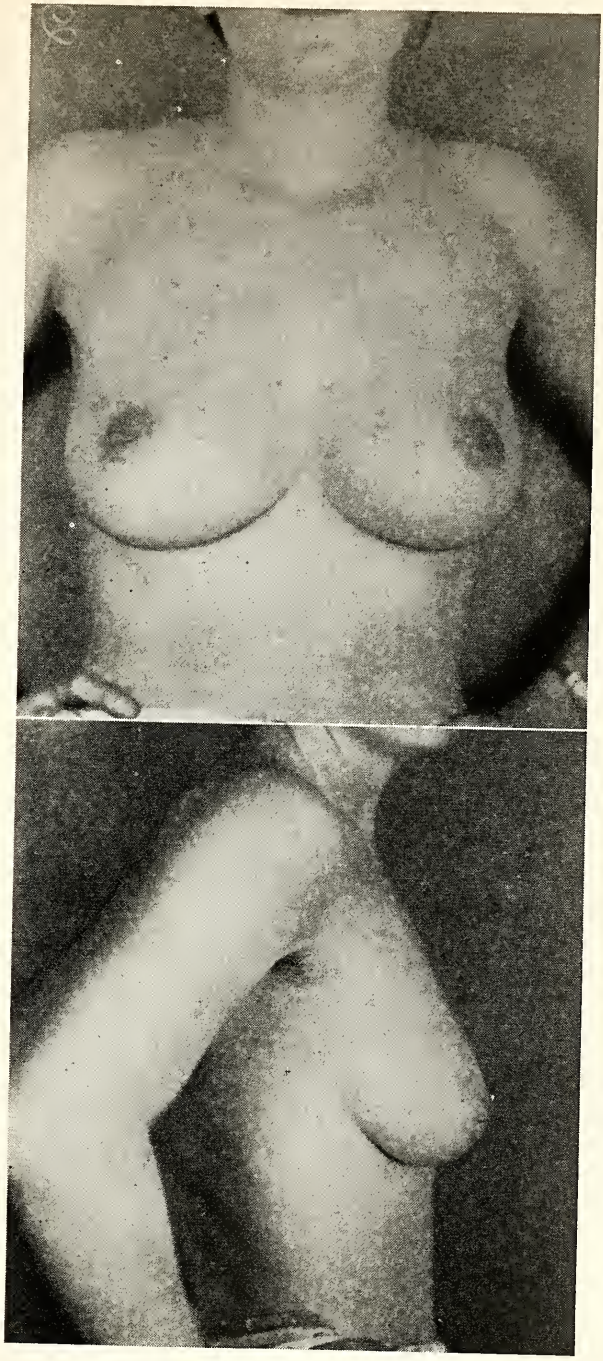

Fig. 6.—The Ball Breast

BALL BREASTS

POSITION OF THE BREASTS

Distance	CMS. FROM MIDLINE			CMS. FROM MIDAXILLARY LINE			CMS. FROM MIDCLAVICLE		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	7 to 9	33	11.7	9 to 12	51	18.0	16 to 20	34	12.0
Medium	9 to 12	209	73.8	12 to 16	204	72.1	20 to 24	200	70.7
Large	12 to 15	41	14.5	16 to 18	28	9.9	24 to 29	49	17.3
Total		283	100.0		283	100.0		283	100.0

SIZE OF THE BREASTS

Size	CMS. IN SEMI-CIRCUMFERENCE			CMS. IN LENGTH			CMS. IN THICKNESS		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	16 to 26	77	27.2	12 to 17	58	20.5	5 to 7	15	5.3
Medium	26 to 31	153	54.1	17 to 21	182	64.3	7 to 10	233	82.3
Large	31 to 39	53	18.7	21 to 28	43	15.2	10 to 16	35	12.4
Total		283	100.0		283	100.0		283	100.0

Fig. 7.

Of the brassieres worn by this group, 30 per cent were loose,—not fitting the breast; 53 per cent were supportive and well fitted; 8 per cent were distortive, and 9 per cent were constrictive. These young women had worn brassieres during periods ranging from 1 to 10 years, but 50 per cent had worn them 5 and 6 years.

Concerning the use of deodorants by these young women, 50 per cent used deodorants. Out of the 50 per cent who did use deodorants, 56 per cent used Odorono; 33 per cent used Mum, and 11 per cent used various others.

The nipples were round in 97 per cent of the ball breasts, and oval in 3 per cent. With regard to color, 44 per cent were pink; 1 per cent strawberry; 14 per cent tan; 40 per cent brown; 1 per cent bluish brown. They were erect in 88 per cent; recessed in 4 per cent; rough in 4 per cent; contained fissures in 2 per cent; were inverted in 1 per cent; and there was a discharge in 1 per cent. Thirteen ball breasts had stetched nipples.

The changes in the breast with relation to the menstrual time are most vividly seen in this type. The breast feels hot to touch, the veins seem prominent, striae are vivid, and the breast looks strutted. This type together with the pendulous, have been most mistreated by brassieres. Many have been bound by a tight brassiere until a line is permanently formed across the top of both breasts. Many have been mashed against the chest wall until their supporting structure is distorted and the breasts become like a bowl of jelly. The girl often remarks, "When my breasts first became large I was so ashamed I bound them with as tight a brassiere as I could get. Now I wear a correct one but it is too late; their shape is gone." Again the brassiere in this type is often too narrow so the breast is held against the chest wall and a cutting line is formed across the top and bottom of the breast.

THE PENDULOUS BREAST

The pendulous breast occurred 100 times in 1,000 girls (fig. 8.). The medium position of the breast is from 10 to 13 cm. from the midline; 13 to 17 cm. from the midaxillary line; 22 to 27 cm. from the midclavicle line. The medium semi-circumference is from 27 to 36 cm. The medium length is from 18 to 25 cm.; and the medium thickness, measured from the nipple to the chest wall is from 8 to 11 cm. Figure 9 shows the position and size of the small, medium and large pendulous breasts when corrected for the probable deviation.

This type of breast has been the most traumatized, due to the fact that it moves as a pendulum with every general movement of the body. Brassieres have been worn longer in this type. Generally, the tendency for the brassiere is to compress the breast against the chest wall, rather than hold it up. One small girl, with very large pendulous breasts, was wearing a brassiere about two sizes too small for her and was stooping so that her shoulders came forward and her breasts were bound and distorted and mashed against the greatly sunken chest.

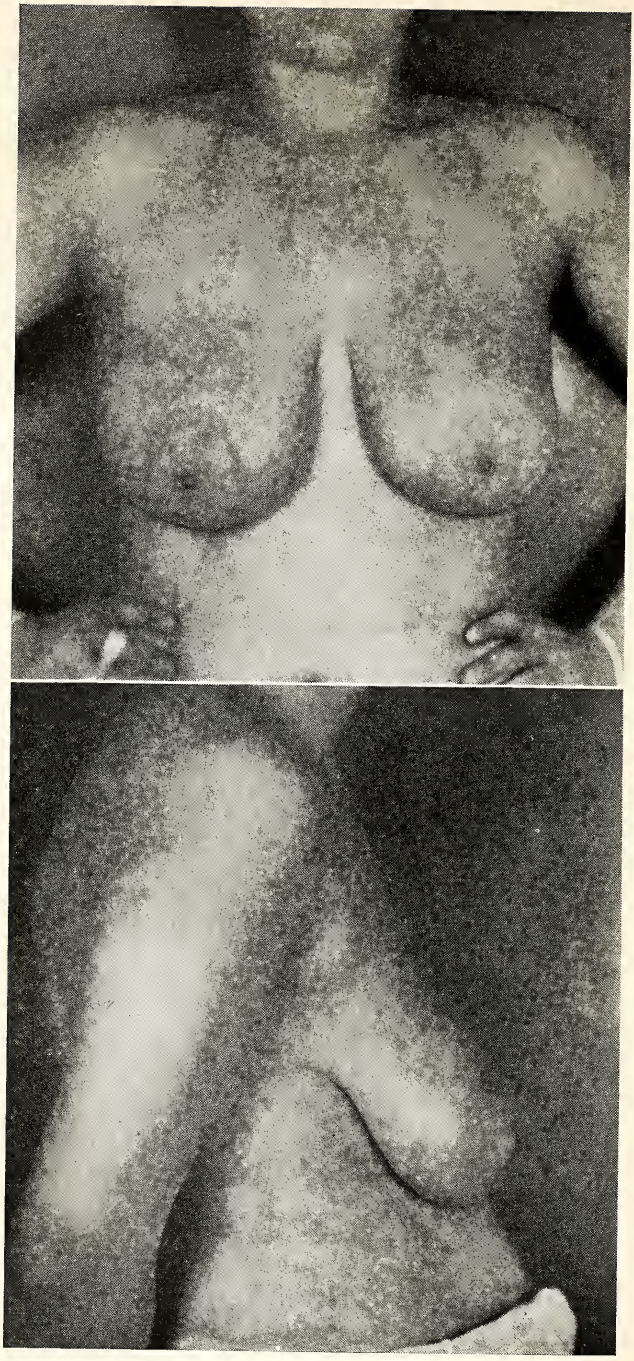

Fig. 8.—The Pendulous Breast

PENDULOUS BREASTS

POSITION OF THE BREASTS

Distance	CMS. FROM MIDLINE			CMS. FROM MIDAXILLARY LINE			CMS. FROM MIDCLAVICLE		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	7 to 10	13	10.7	9 to 13	17	13.9	14 to 22	16	13.1
Medium	10 to 13	97	79.5	13 to 17	82	67.2	22 to 27	77	63.1
Large	13 to 18	12	9.8	17 to 22	23	18.9	27 to 26	29	23.8
Total		122	100.0		122	100.0		122	100.0

SIZE OF THE BREASTS

Size	CMS. IN SEMI-CIRCUMFERENCE			CMS. IN LENGTH			CMS. IN THICKNESS		
	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total	Extremes	No. of Breasts	% of Total
Small	14 to 27	32	26.2	8 to 18	22	18.0	4 to 8	35	28.7
Medium	27 to 36	67	54.9	18 to 25	78	64.0	8 to 11	66	54.1
Large	36 to 49	23	18.9	25 to 38	22	18.0	11 to 17	21	17.2
Total		122	100.0		122	100.0		122	100.0

Fig. 9.

With regard to pain in the breast, 70 per cent had no pain; 30 per cent had pain. The menstrual periods were regular in 90 per cent of the cases and irregular in only 10 per cent. The occurrence of menstrual pain ran parallel with pain in the breast; 66 per cent had no menstrual pain; 28 per cent had mild menstrual pain; 6 per cent had moderate pain. In this group of young women with pendulous breasts it is interesting to note that none had severe menstrual pain.

All of these girls wore brassiers; 30 per cent were loose; 48 per cent were supportive; 11 per cent were distortive; 8 per cent were constrictive, and 3 per cent wore corselettes. In general the brassieres were worn 5 to 6 years though some were worn 2 years and some 10 years.

Of the women with pendulous breasts, 49 per cent used no deodorants. Of the 51 per cent that used deodorants, 70 per cent used Odorono; 20 per cent used Mum; and 10 per cent used other kinds.

GOAT UDDER-LIKE BREAST

The goat udder or pyramidal type of breast occurred only in 1 per cent of cases. It always pointed downward, as an inverted pyramid. The number of cases was so small that no definite statement as to its size and position could accurately be made. Hence attention is only called to its presence and other observations are left for further study.

COMPARISON OF THE TYPES OF BREASTS

Figures 11, 12 and 13 show the variations in the sizes of the different types of breasts. The flat breast is seen to be smallest. The breasts are increasingly large in this order—the cone, the ball and the largest of all, the pendulous. Greater variation is shown in the size of the pendulous breast than in the other groups.

The position of all types of breasts on the chest wall varies less than the size of all types of breasts as shown by figures 14, 15 and 16.

It is interesting to note that the curves showing the height of the girls in the four different groups (fig. 17) vary little. From figure 18 it is seen that the girls in the group with flat breasts and cone breasts weigh generally between 105 and 115. On the other hand the group of girls with ball and pendulous breasts more often weigh between 120 and 140.

UNEQUAL BREASTS

There were 14 per cent of the breasts unequal in measurement (fig. 19.). The right was larger in 57 per cent of the cases. The left was larger in 43 per cent of the cases. The right was lower in 52 per cent of the cases. The left was lower in 48 per cent of the cases.

These breasts were classified according to size as: large 13 per cent; medium 69 per cent; small 18 per cent. According to shape, 30 per cent were pendulous; 32 per cent were cone shaped; 36 per cent were ball breasts; and 2 per cent were flat breasts.

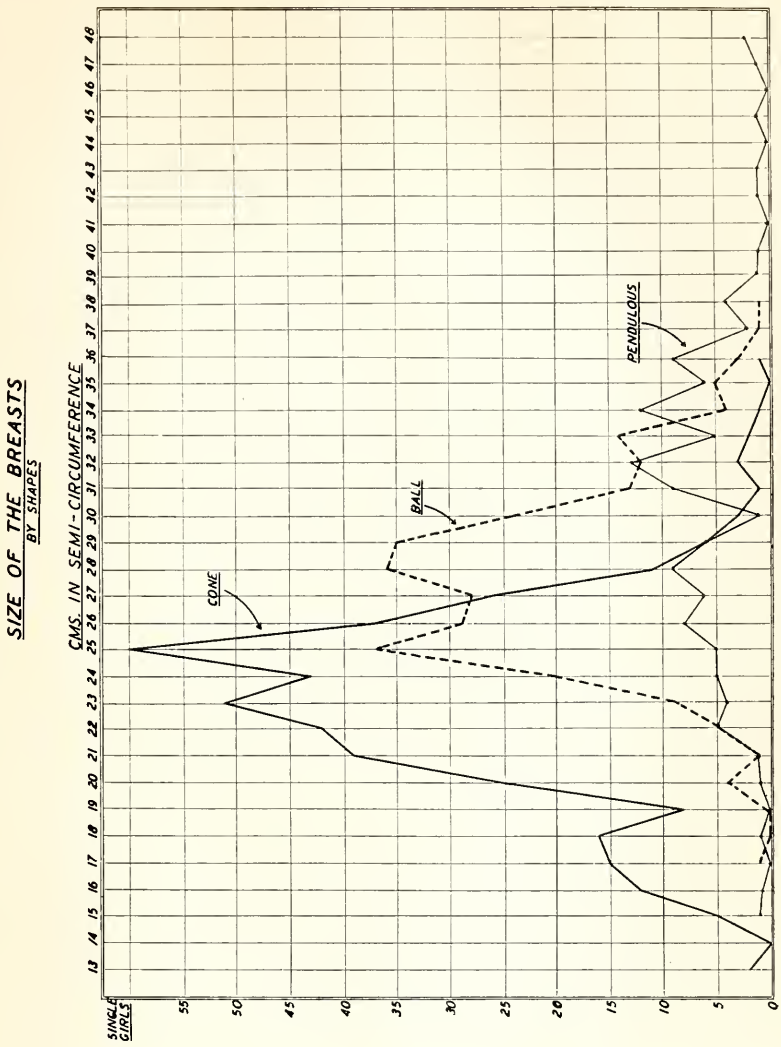
SIZE OF THE BREASTS
BY SHAPES
CMS. IN SEMI-CIRCUMFERENCE
SINGLE GIRLS
13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
55 50 45 40 35 30 25 20 15 10 5 0
CONE
BALL
PENDULOUS

FIG. 11.

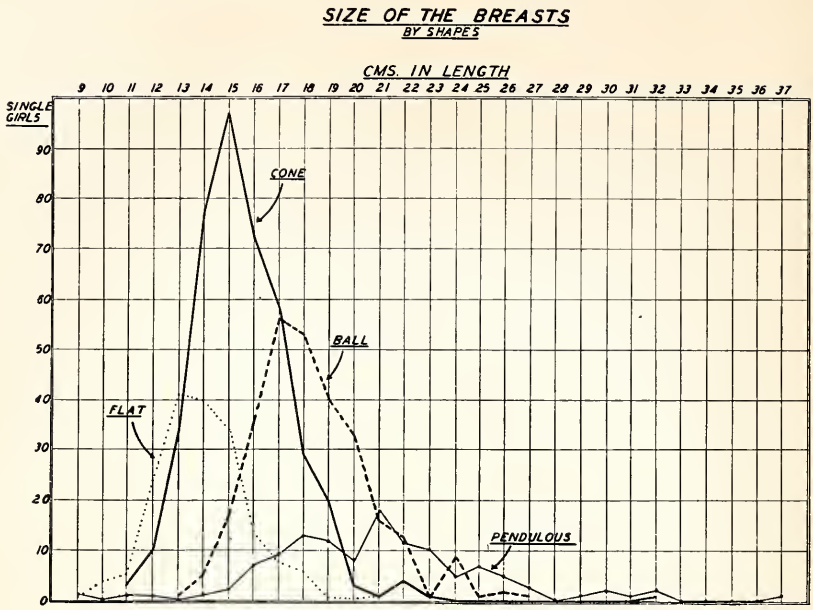
SIZE OF THE BREASTS
BY SHAPES
CMS. IN LENGTH
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
SINGLE GIRLS
90
80
70
60
50
40
30
20
10
0
CONE
BALL
FLAT
PENDULOUS

FIG. 12.

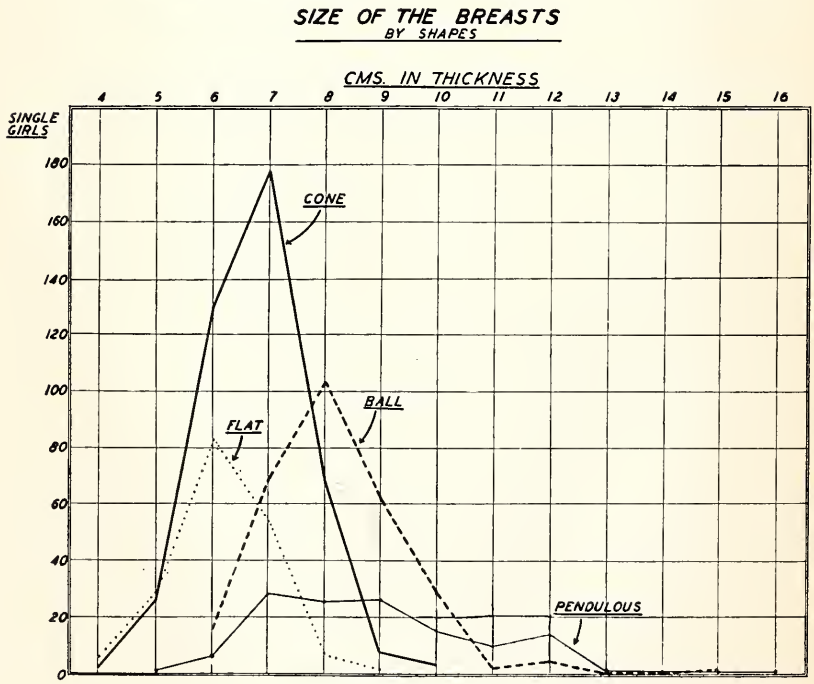
SIZE OF THE BREASTS
BY SHAPES
CMS. IN THICKNESS
4 5 6 7 8 9 10 11 12 13 14 15 16
SINGLE GIRLS
180
160
140
120
100
80
60
40
20
0
CONE
BALL
FLAT
PENDULOUS

FIG. 13.

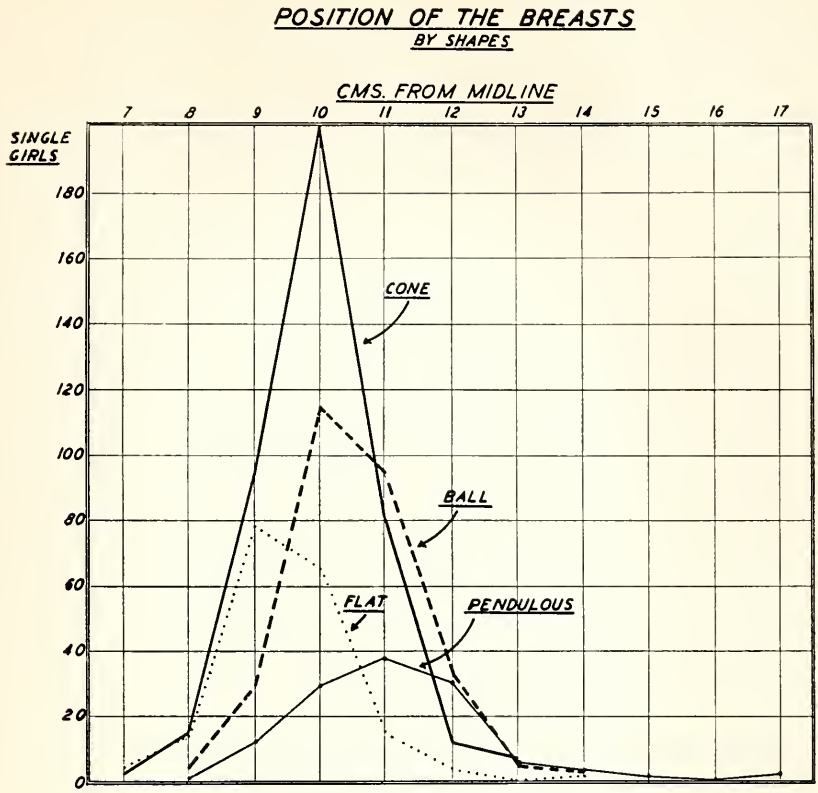

FIG. 14.

Of the 141 cases where one breast was larger than the other, 65 per cent had no pain in their breasts at menstrual time; 35 per cent had pain in their breasts at menstrual time. Of this group, 95 per cent reported regular menstrual periods, and only 5 per cent had irregular menstruation. In regard to the menstrual pain, 60 per cent had no menstrual pain; 20 per cent had mild menstrual pain; 9 per cent had moderate menstrual pain; and 11 per cent had severe menstrual pain. Thus the occurrence of pain in the breast is approximately the same in the equal and in the unequal breasts (fig. 20.).

PAINFUL BREASTS

Out of one thousand cases, 317, approximately 32 per cent, were found to have pain in their breasts before or during the menstrual period (fig. 21.). The establishment of menstruation among these girls occurred most frequently at 13. The onset of pain in the breast occurred most frequently from 16 to 19. The average ages of these girls were from 18 to 20. The onset of pain in the breast apparently did not begin at the onset of men-

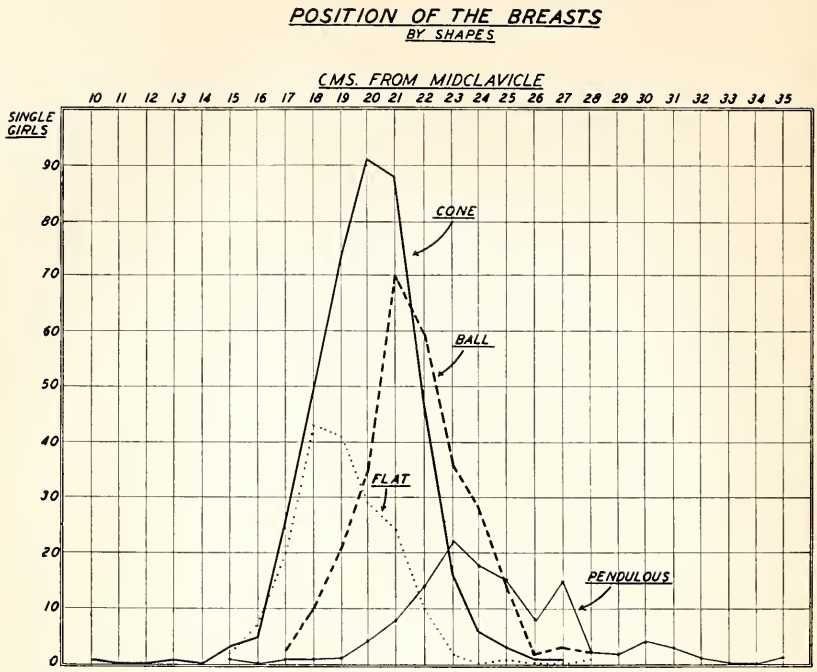

FIG. 15.

struation, but three years later. That is, there was a period of time between the ages of 13 and 16 when the majority had very little pain in their breasts (fig. 22.).

A study of the menstrual history of the girls who had no pain in the breast shows that 72 per cent had no menstrual pain; 16 per cent had mild menstrual pain; 7 per cent had moderate menstrual pain, and 5 per cent had severe menstrual pain. On the other hand a study of the menstrual history of the group of girls with pain in their breasts shows an increase of 25 per cent in menstrual pain as compared to the group of girls without pain in their breasts. The figures are as follows: 49 per cent had no menstrual pain; 25 per cent had mild menstrual pain; 11 per cent had moderate menstrual pain, and 15 per cent had severe menstrual pain (fig. 23.).

With regard to the regularity of the menstrual pain there was no difference in the group of girls without pain in the breast and the group of girls with painful breasts. Expressed in percentage of the girls without pain in their breasts, 88 per cent had regular menstrual periods, 12 per cent had irregular menstrual periods. In the other group, those with no pain in their breasts, 84 per cent had regular menstrual periods; 16 per cent had irregular menstrual periods (fig. 24.).

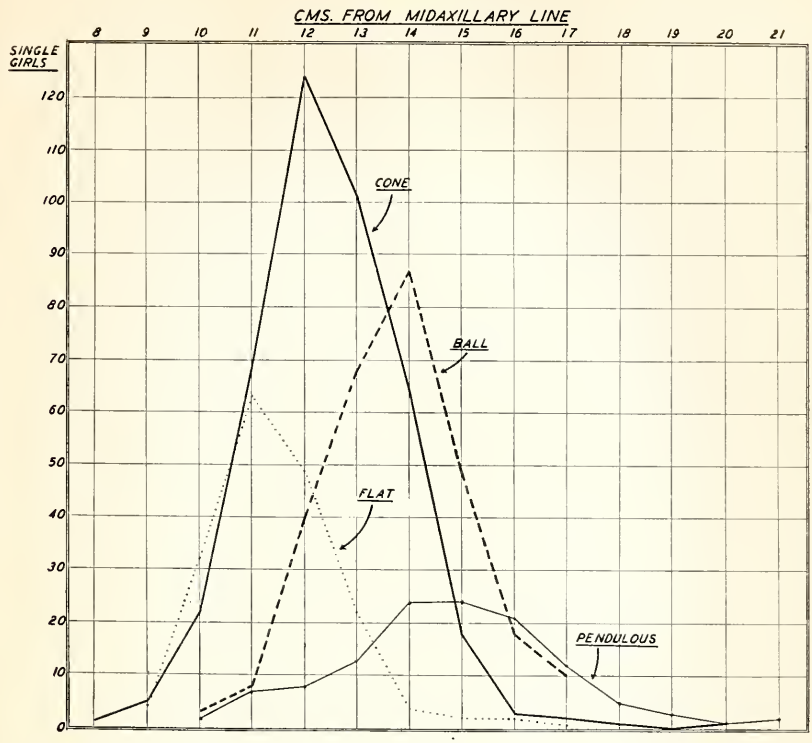
POSITION OF THE BREASTS
BY SHAPES
CMS. FROM MIDAXILLARY LINE
8 9 10 11 12 13 14 15 16 17 18 19 20 21
SINGLE GIRLS
120 110 100 90 80 70 60 50 40 30 20 10 0
CONE
BALL
FLAT
PENDULOUS

FIG. 16.

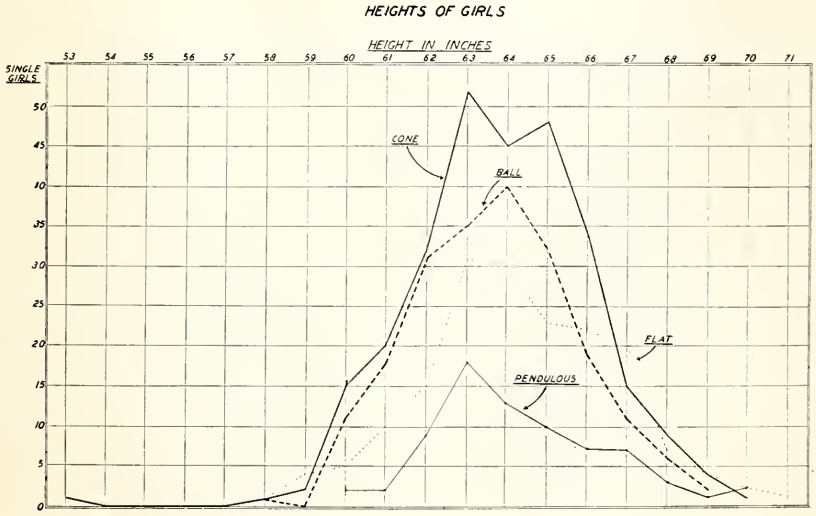
HEIGHTS OF GIRLS
HEIGHT IN INCHES
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
SINGLE GIRLS
50 45 40 35 30 25 20 15 10 5 0
CONE
BALL
FLAT
PENDULOUS

FIG 17

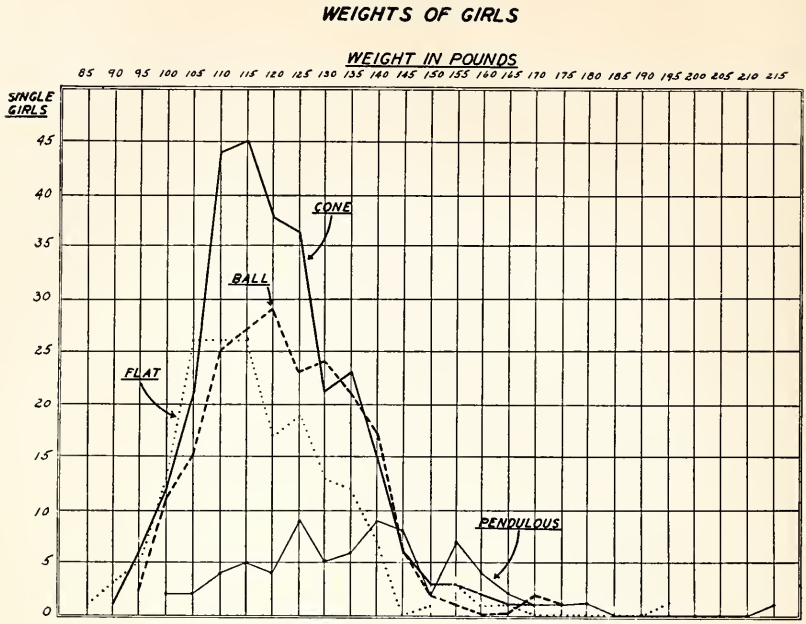

FIG. 18.

In regard to the time of ocurrence of pain in the breasts with relation to the menstrual period, 87 per cent of these girls had pain in their breasts before the period; 8 per cent during the period; 1 per cent after the period; and 4 per cent had pain in their breasts during the menstrual intermission. This pain varies from a severe soreness of the whole breast to a soreness of the nipple when wearing a brassiere. With regard to the duration of the pain in the breast at the menstrual time: in 32 per cent it lasted one day; in 37 per cent two days; in 15 per cent three days; in 4 per cent four days; in 4 per cent five days; in 3 per cent six days; and in 5 per cent seven days. With regard to the character of the pain in the breast at the menstrual time, 76 per cent reported the pain as mild; 22 per cent as moderate; and 2 per cent as severe. The pain was dscribed by 62 per cent as tenderness; by 11 per cent as a tenderness and fulness; by 10 per cent as a tenderness and swelling; by 4 per cent as a tenderness, sweling and fulness; by 4 per cent as a soreness; by 3 per cent as a swelling; by 2 per cent as a tenderness, swelling, fulness and soreness; by 3 per cent as a tendernes and soreness; and by 1 per cent as a fulness (fig. 25.).

In answer to the question, does pain occur in one type of breast more than another, these percentages were found to occur: Of the flat breasts, 70 per cent had no pain in the breast, 30 per cent had painful breasts. Of the cone breasts, 65 per cent had no pain in the breast, 35 per cent had

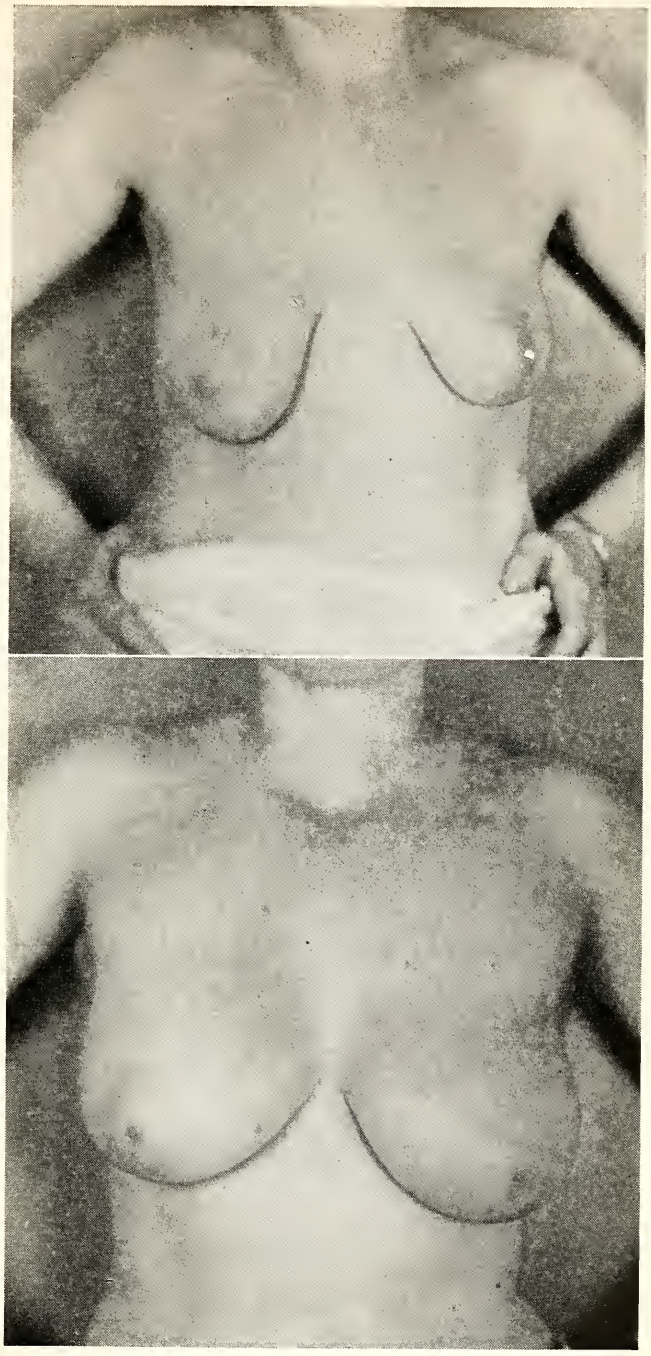

Fig. 19.—Unequal Breasts

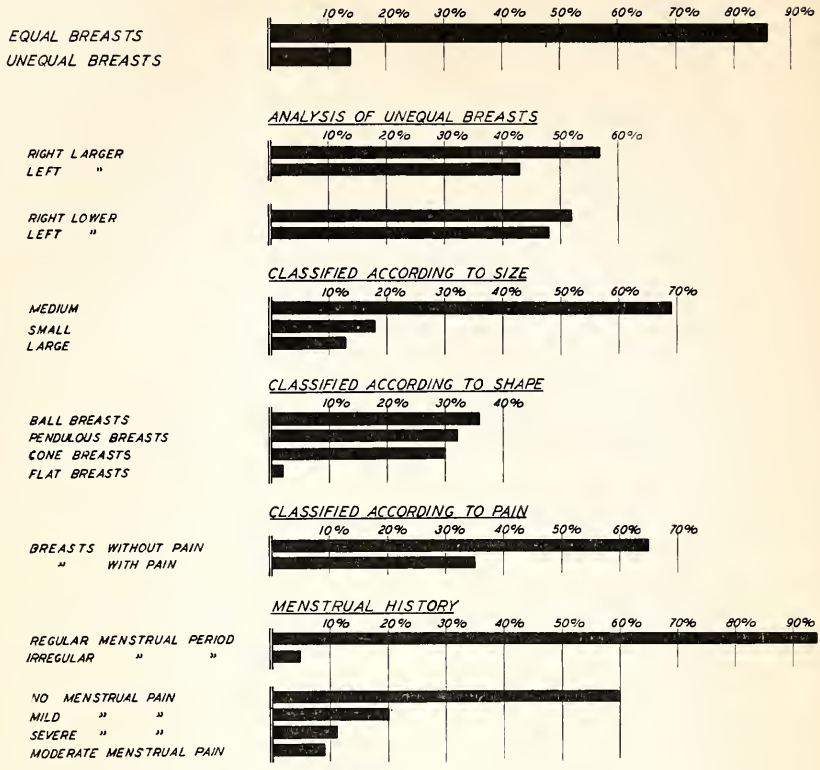

FIG. 20.

SHOWING PERCENTAGE OF PAINFUL BREASTS AT MENSTRUAL PERIOD.
(OCCURING IN 1,000 SINGLE GIRLS BETWEEN THE AGES OF 16 AND 25)

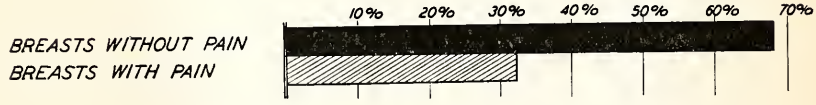

FIG. 21.

A COMPARISON OF AGE AT ONSET OF MENSTRUATION WITH AGE AT ONSET OF PAIN IN THE BREAST

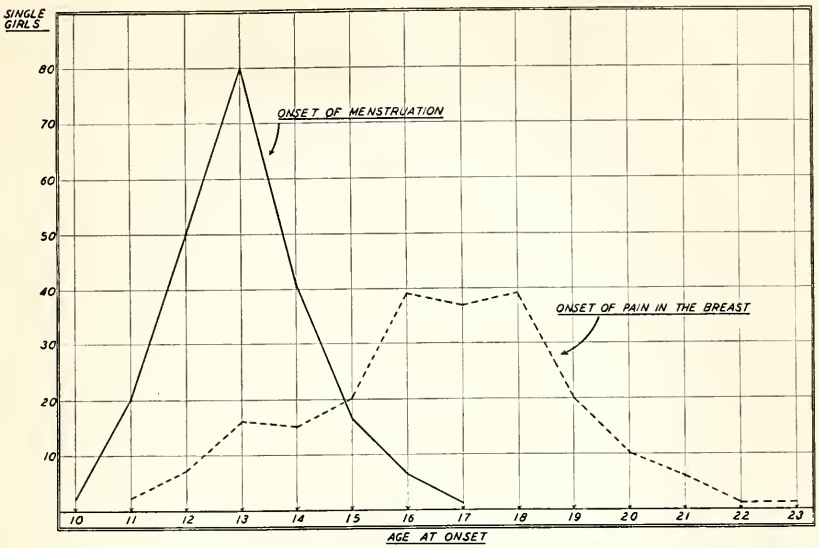

FIG. 22.

pain in the breast. Of the ball breasts, 74 per cent had no pain in their breasts, 26 per cent had painful breasts. Of the pendulous breasts, 70 per cent had no pain in their breasts, 30 per cent had painful breasts (fig. 26.).

The history of menstrual pain in the girls who had flat breasts showed 67 per cent had no menstrual pain, 33 per cent had menstrual pain. Among the girls with cone breasts, 61 per cent had no menstrual pain, 39 per cent had menstrual pain. Among the girls with ball breasts, 66 per cent had no menstrual pain, 34 per cent had menstrual pain. Among the girls with pendulous breasts, 66 per cent had no menstrual pain, 34 per cent had menstrual pain. Here it is seen that while the curve of pain in the breast runs parallel with the curve of menstrual pain, there is an increase of 3 to 8 per cent of menstrual pain over pain in the breasts.

Does pain in the breast occur more often in the fat girl or the thin girl, in the tall girl or the short girl? Does pain occur more often in the large breasts than in the smal breast? The following facts were found:

HEIGHT OF GIRLS

	Breasts Without Pain	*Breasts With Pain*
Very tall	14 per cent	8 per cent
Tall	37 per cent	45 per cent
Medium	32 per cent	33 per cent
Short	16 per cent	14 per cent
Very short	1 per cent	

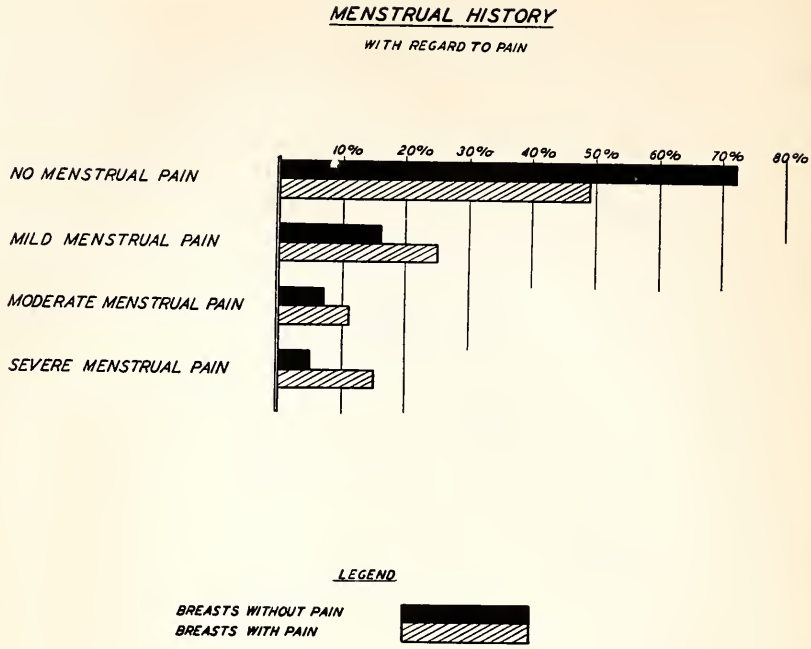

FIG. 23.

WEIGHT OF GIRLS

20 to 30 lbs. below normal	13 per cent	10 per cent
10 lbs. below normal.....	22 per cent	22 per cent
Normal	49 per cent	56 per cent
10 lbs above normal	9 per cent	7 per cent
20 to 30 lbs. above normal	7 per cent	5 per cent

SIZE OF BREASTS

Very large	1 per cent	0 per cent
Large	6 per cent	6 per cent
Medium	50 per cent	54 per cent
Small	43 per cent	40 per cent

THE NIPPLES

The nipples may be classified according to color into six different types as follows: (fig. 30)

Strawberry	2 per cent
Pink	39 per cent
Bluish Brown	2 per cent
Brown	49 per cent
Tan	8 per cent

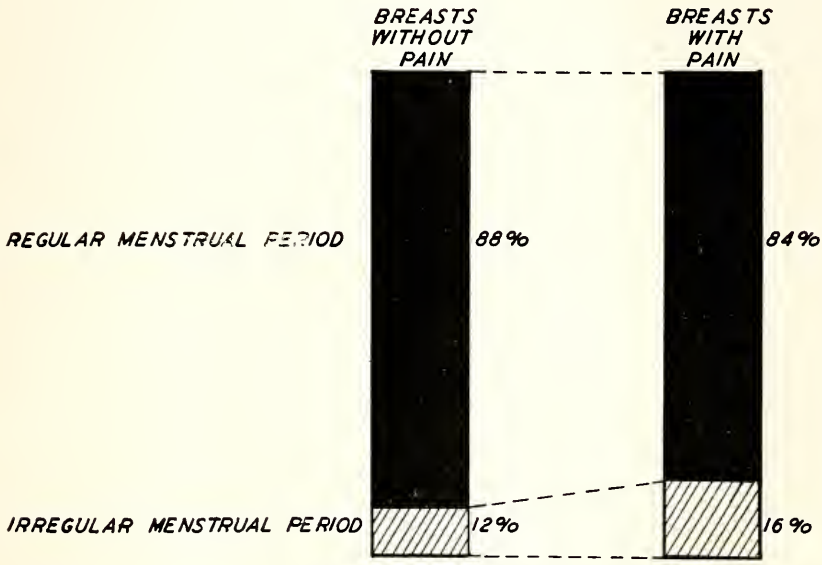
MENSTRUAL HISTORY
WITH REGARD TO REGULARITY
BREASTS WITHOUT PAIN
BREASTS WITH PAIN
REGULAR MENSTRUAL PERIOD
88%
84%
IRREGULAR MENSTRUAL PERIOD
12%
16%

FIG. 24.

In regard to the shape, one finds the following: (fig. 30)

1. Inverted nipples ..... 1.5 per cent
2. Recessed nipples that can be extruded ..... 4.5 per cent
3. Rough nipples ..... 2.4 per cent
4. Nipples with fissures ..... 2.2 per cent
5. Erect .....89.4 per cent
6. Discharging nipples ..... 0.0 per cent

Many of the nipples that look, on first examination, to be inverted can easily be extruded. One can well imagine that in later life these same nipples, when the breast is lactating, will be definitely inverted and cause great pain to the mother with a resulting inability to nurse the infant. If the young woman who has these inverted nipples today is educated to extrude the nipple when she takes her bath she should find that after awhile she has a normal nipple.

Roughnes varies from a very irregular group of warty like protrusions to only two warty like protrusions. In two cases this very definite roughness was accompanied by a dry discharge. In one of these the discharge was so definitely attached to the warty like projection that it could not be separated, and it seemed to extend to the depth of the nipple. This case looked like a definite forerunner of Paget's disease of the nipple.

In many of the breasts there was a definite pouting of the nipple, and at times the whole areola was part of this pouting. The nipple and the areola seemed to come forward and to balloon out. While examining these breasts the nipple and the areola would contract and the ordinary shape would result. This is apparently a sexual occurrence, for at times it was accompanied by an excitation. One girl showed an extreme incidence of this. Before she came into the room I could hear her talking loudly. She undressed excitedly, giggled and laughed a lot, knocked down two pictures off the wall as she passed by, stumbled over the chair and sat down. Her face was flushed and she remarked, "I am sorry to cause all this disturbance but I cannot help it. I am excited to death." The breasts were like the menstrual breast, but she was not menstruating; and there was a very large pouting of the nipple.

In a few cases the nipple and the areola were bluish in color. This was due to an increase in a brownish pigmentation with the presence of many veins. Most of these occurred in the ball breasts, and in brunettes.

A definite strawberry colored nipple was found in some cases. In these nipples some 8 to 10 ducts were visible. The skin seemed very thin over the whole nipple. It would be interesting to know if Paget's disease of the nipple occurs more frequently in this type.

Accessory nipples were found in 1.8 per cent of cases. None of these girls knew what these were, but considered them moles. Two accessory nipples were found in one girl. These are in reality all probably cases of polymastia. Deaver and McFarland[1] say all cases of supernumerary nipples

are cases of polymastia except those in which such a supernumerary structure is present upon what appears to be a single and otherwise normal mammary gland.

THE BREAST AND THE BRASSIERE

No consideration of the breast and its care would be complete without a study of the support of the breast, namely the brassiere. I classified brassieres into the following types: the supportive brassiere, the loose or no brassiere, the distortive brassiere and the constrictive brassiere. Figures 27, 3, and 29 illustrate these types. I originally had the corselette in the group but only three girls had ever worn a corselette.

Fifty per cent wore no brassiere or a very loose, ill-fitting brassiere; 38 per cent wore a supportive brassiere; 7 per cent wore constrictive brassiere and 5 per cent wore a distortive brassiere. The following table shows the occurrence of pain in the breast as found in those groups that wore the supportive brassiere, the loose brassiere, the distortive brassiere and the constrictive brassiere.

	Percentage of All Brassieres	*Breasts Without Pain*	*Breasts With Pain*
Supportive	38 per cent	74 per cent	26 per cent
Loose	50 per cent	66 per cent	34 per cent
Distortive	5 per cent	70 per cent	30 per cent
Constrictive	7 per cent	60 per cent	40 per cent

From the above figures it is seen that the breast supported by a well fitting brassiere had *8* per cent less pain than a breast supported by no brassiere or a loose ill-fitting brassiere; *4* per cent less pain than the breast distorted by a brassiere and *14* per cent less pain than a breast constricted by a brassiere.

In a few isolated cases there was a definite inversion of the nipple due to the fact that the breast had been pulled downward and distorted by an extremely tight brassiere. With the distortive and constrictive type of brassiere a definite depression was made on the breast at the upper margin of the brassiere. Evidence was found of a breaking down of the supportive tissues due to the distortive brassiere, and the girls often remarked, "My breasts did not used to hang this way but I wore a brassiere that was too tight." However, at the present time the tendency is rather to wear a loose lace-like non-supportive brassiere, and through this lack of support there is an added strain on the structural tissue of the breast. The structure and shape of the breasts were definitely better preserved in those girls who had worn from adolescence a brassiere of the supportive type with a band at the base which bore the strain, and fitting concavities for the breasts. The shallow lace brassiere with its narrow silk ribbon straps catches the eye but not the breast. Then what constitutes a good brassiere?

A brassiere is described as an under-garment for the purpose of supporting breasts.

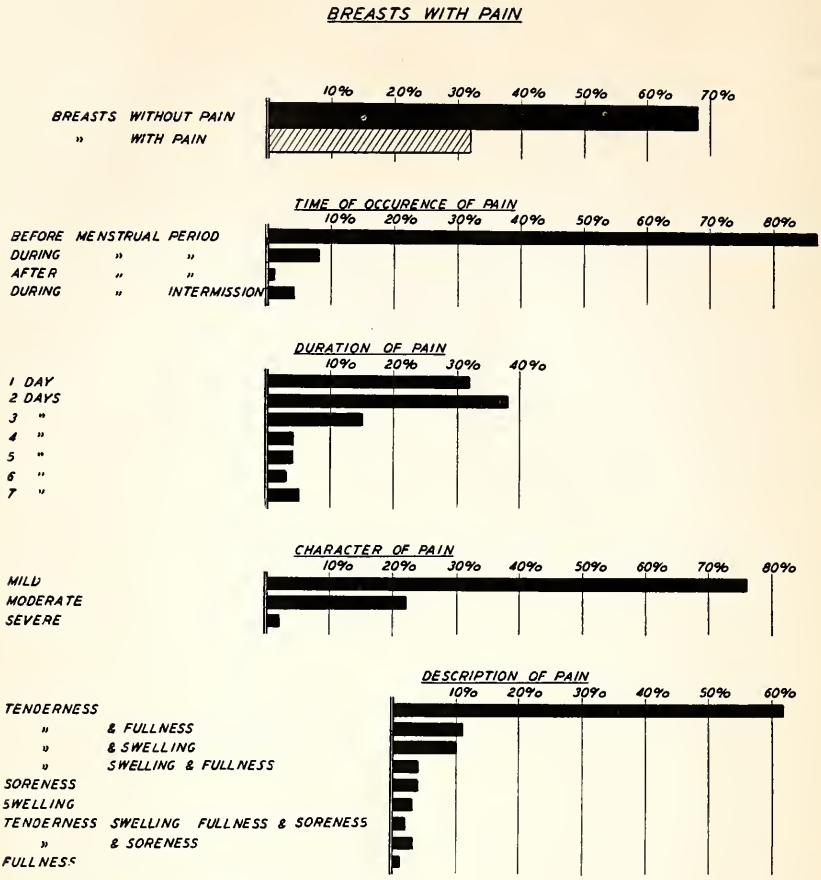

FIG. 25.

Many young women apparently select brassieres on the sole consideration of appearance, delicacy, or sheerness of the material, and ornamental effects. For this reason most manufacturers of women's under-garments, in an effort to provide articles as required by the purchaser, give no attention to the function of breast support in the manufacture of these garments. A well-fitting brassiere means not only one in which the so-called "cup" conforms accurately to the size, shape and position of the breast tissue, but especially and particularly includes a band of fairly heavy material which fits snugly around the body just below the breast and likewise includes strap support over the shoulders of proper length and of proper width. These should be attached in the case of heavy or pendulous breasts at two points in front and should not have any elastic material in the strap.

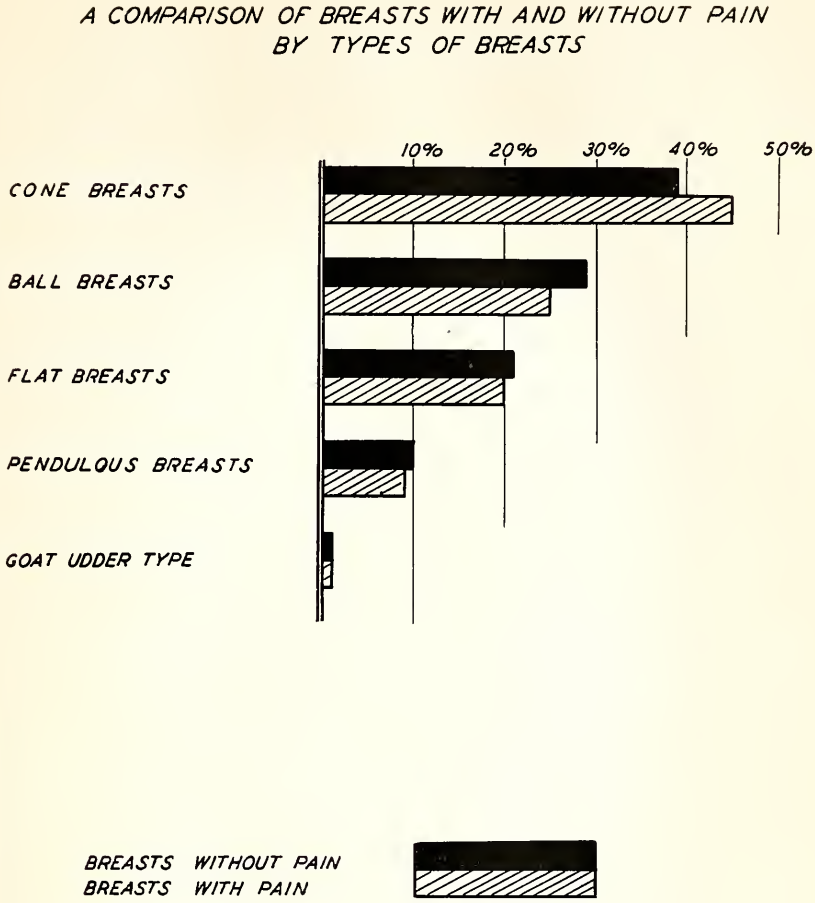

FIG. 26.

Probably 90 per cent of all brassieres purchased are bought as a result of inspection of the material, type, color, quality, and on an arbitrary signed statement which may vary very materially as between different manufacturers. Very few young women actually have brassieres fitted before purchasing.

DISEASES OF THE BREAST

In this group of one thousand girls from 16 to 25 I found tumors in 3 per cent. These were more commonly simple adenomas or small cysts, or a mole on the breast (there were 7 of these.) In 6 cases rather indefinite

Fig. 27.—Supportive Brassieres

Fig. 28.—Distortive Brassieres

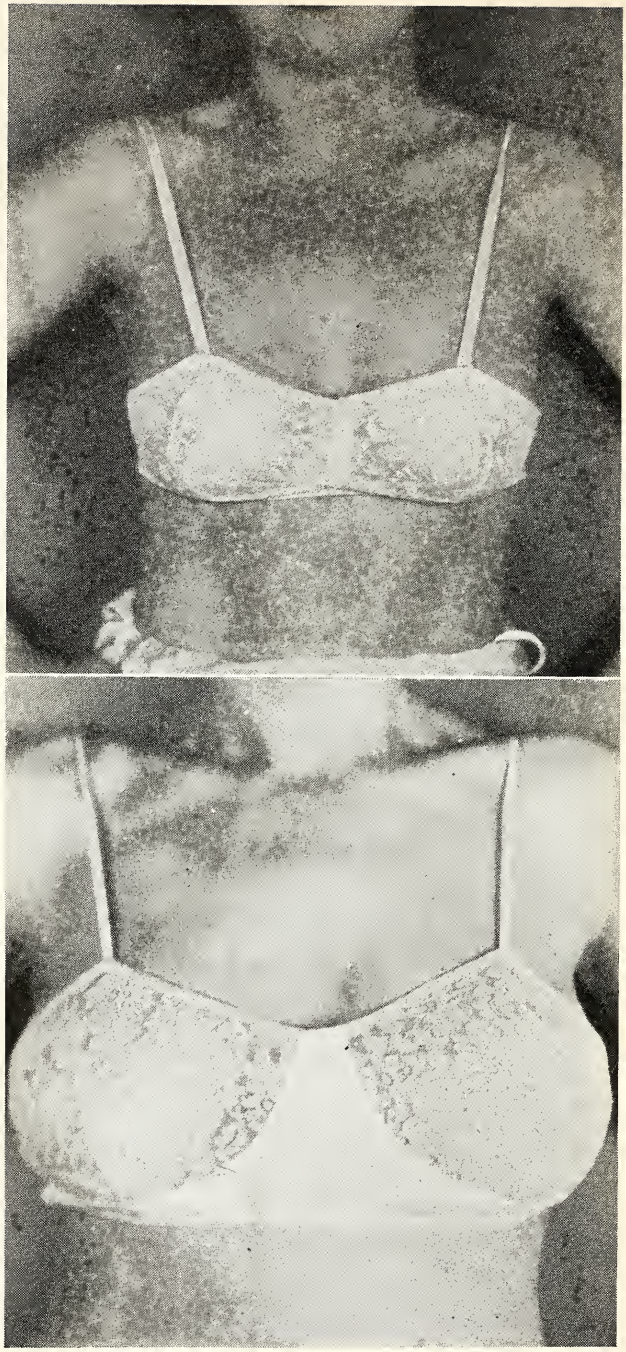

Fig. 29.—Incorrect Lace Brassieres

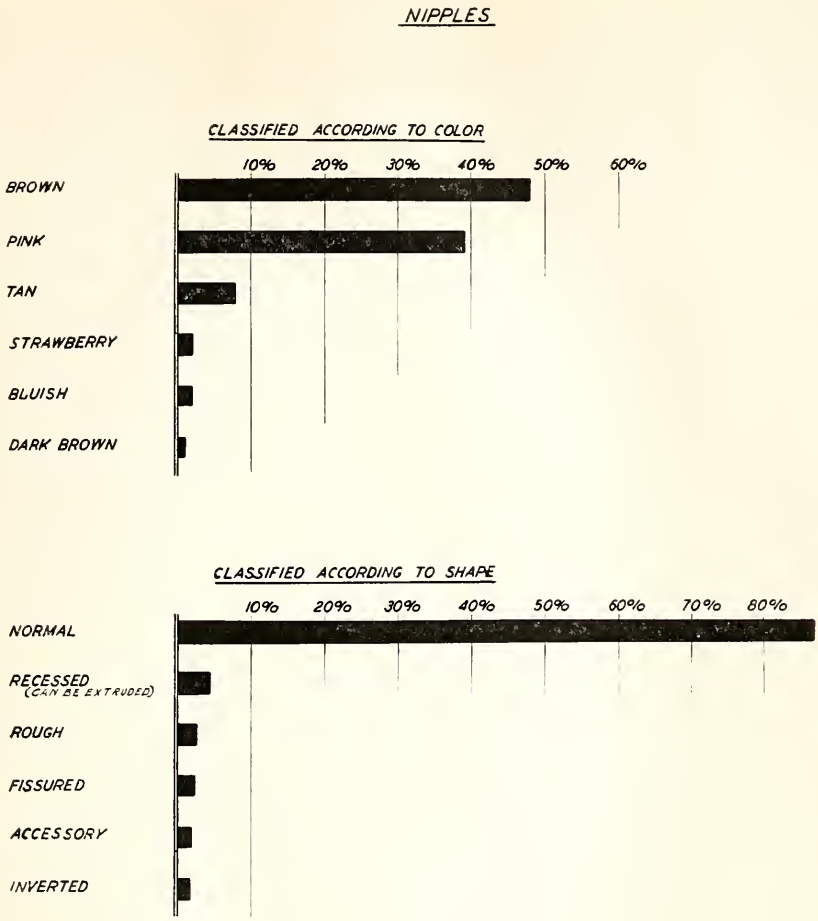

FIG. 30.

cords were felt. In no case were the axillary glands associated with a tumor. In 0.5 per cent there was a history of previous abscess in the breast. In one girl an infantile breast was found. This young lady was 21 years of age, had never menstruated, and no breast tissue was palpable. Only the nipple was visible.

THE BREAST AND DEODORANTS

An effort was made during these examinations to find out if there is any relation between the use of deodorants and the occurrence of pain in the breast. Seven hundred college girls, most of whom live in the country, were questioned concerned their use of deodorants. The majority use

Odorono and Mum, but Nonspi, Shun, Hush, Dew, Spiro, Vivatone and Amolin were occasionally used. The prevailing idea was that Odorono was the most effective but also the strongest. It is usually applied at night because if applied during the day the dress worn immediately afterward is most likely ruined. One girl said she used Odorono till it ate a hole in her dress, then she got scared and stopped using it. The next day after applying Odorono to the armpits in small quantities the skin feels hard, tough, dry and itches.

Out of the 700 girls, 358 used deodorants, a percentage of 50. This it is thought is a rather low percentage because most of these girls either could not afford many luxuries or having lived in rural sections had not learned to use such things. Of the girls that used deodorants 65 per cent had no pain in their breasts, 35 per cent had pain in their breasts. This is an increase of 3 per cent of pain in the breast over the general incidence of pain in the breast.

Of the group using no deodorant 73 per cent had no pain in the breast and only 27 per cent had pain in the breast. Thus there is an 8 per cent increase of pain in the breast among those girls who use deodorants. Further study along this line would be most interesting.

PROPER CARE OF THE BREASTS

What then constitutes proper care of the breast in single women between the ages of 16 and 25? Such care consists first in a recognition on the part of the mother of the important fact that in every adolescent daughter the breast is beginning to grow. There should be an explanation to the child by the mother that she is beginning to be a woman, that it is natural for her breasts to get larger and that the breasts help to make up a good figure. This will prevent early marked distortion due to shyness, and prepare the young girl for correct care of the breast. At this time a girl should be taught that the breast is a tender and delicate organ easily bruised and therefore should always receive gentle care in bathing. Second, the corect type of brassiere should be worn constantly. This garment should give support without constriction. It should fit the particular individual, having a band below the breast as the only binding part of the garment. The correct brassiere will have cup-like sacs that fit the breast. The material of the brassiere should be both soft and strong, capable of holding the breast. The straps should be wide enough to lie comfortably on the shoulder.

Third, the use of deodorants, especially very strong ones, should be limited.

Fourth, if the nipple is recessed or inverted gentle stretching of the breast away from the nipple performed once a week will probably correct this condition. If there is drynes or scaliness, applying a bland emollient should correct this condition.

CONCLUSIONS

1. The human breasts may be classified as the flat breasts, the cone breasts, the ball breasts, the pendulous breasts, the goat udder or pyramidal breasts.

2. In this series of 1,000: 42 per cent of breasts are cone shaped; 27 per cent of breasts are ball breasts; 20 per cent are flat breasts; 10 per cent are pendulous breasts; 1 per cent are goat udder or pyramidal breasts.

3. Tables (based on the measurements of the breasts of 1,000 girls) showing the medium size and position of the flat, the cone, the ball and the pendulous breasts are presented.

4. Fourteen per cent of breasts are unequal in size and position. The right breast was larger in 57 per cent of cases and it was lower in 52 per cent of cases.

5. Pain in the breast ocurs in 32 per cent of cases. This runs parallel with the history of menstrual pain. This pain first occurs about the age of 16. Pain in the breast occurs slightly more often in the cone breasts. The pain in the breast apparently does not vary with the size of the breast.

6. The nipples are inverted in 1.5 per cent of cases, recessed in 4.5 per cent, rough in 2.4 per cent, contain fissures in 2.2 per cent and are erect in 89.4 per cent of cases. Among the 1,000 women, 1.8 per cent accessory nipples were found.

7. In the ball and cone breasts during the premenstrual season, the breasts looked tight, the veins and striae were prominent, and the breasts felt hot to the examining hand. Transillumination of the breast showed a generalized cloudiness.

8. The brassieres worn were classified as loose or no brassiere, a supportive brassiere, a distortive brassiere and a constrictive brassiere. There was slightly (4 per cent) less pain in the breasts of the girls who wore supportive brassieres. Inverted nipples due to the distorting downward pull of a tight brassiere were found to have occurred.

9. The correct brassiere is described.

10. Tumors of the breast were found in 3 per cent of cases. Nearly one third of these were moles in the skin over the breast.

11. In 0.5 per cent of cases there was a history of previous mastitis.

12. There was an 8 per cent increase of pain in the breast among the women who used deodorants when compared with those who used no deodorant. Odorono was used in the majority of cases.

13. Proper care of the breast is described.

14. Any condition which causes pain must be considered as a possible forerunner of cancer. Less pain occurred in breasts supported from puberty by a well fitting brassiere. Less pain occurred in the breasts of the young women who used no deodorants. Proper and gentle care of the young breast will probably prevent pain in the breast in later years.

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DISCUSSION

Dr. Verne Caviness (Raleigh): Mr. Chairman, I think this paper brings out a point that we are all very prone to overlook in medicine, namely, the practical aspect of what is a normal or an average.

It is very easy to conclude that since the two breasts are different in size or have dierent relative positions on the two sides of the chest wall, that there is some abnormality there, certainly some variation from what is usually considered the average position.

This is rather important, I think, from many angles. I am sure all of us have seen surgeons who in considering the treatment of chronic mastitis or other conditions of the breasts of that type would recommend removal of the breast because it was larger or smaller than the other. Yet, according to the work done by Dr. Miller, it is very apparent that a variation in size or in position is perhaps almost as normal or as average as having the two breasts identical.

We are all aware of the fact that the two sides of the face are never identical. There are always slight variations on the two sides, and many people hold that that constitutes facial beauty—having slight variations on the two sides.

I think that the question of the education of the young women, as Dr. Miller suggested, could have farreaching effects. The average young girl has no conception whatever of what she is getting into when she

reaches the age of puberty. A brassiere is a brassiere to her, and I have no doubt that the one with the smallest, the narrowest straps,—which would be the least conspicuous at that age, or the one with the most lace—would be the one that would appeal to her most. If you could get the mothers to educate the daughters in that respect, I think it would have great value for the girls.

I would like to ask two questions of Dr. Miller, if she has considered them. One is: If she went into the fact of the relation between the size and type of the breast as compared with the body weight of the girl. That is, would a pendulous breast be more likely to appear on a fat girl than on one of average weight? Also, would a flat type of breast be more likely to appear on the thin emaciated person?

One other question on which I would like to hear her opinion: What is her opinion as to the effect of massage and manipulation of the breast as practiced by girls for the purpose of enlarging their breasts? What effect would that have on the likelihood of these girls having menstrual pain, or having pain in the breast at the time of the menstrual period?

I think that the doctor is working on the determination of the normal, which is one of the most important things that we can do in medicine. (Applause)

Chairman Holmes: This most interesting paper is now open for general discussion.

Dr. Louise M. Ingersoll (Asheville): I think Dr. Miller is to be congratulated on her very interesting work on this subject.

I would like to ask Dr. Miller whether she has found in any followup work that the wearing of a tight brassiere has any effect upon the ability of the mother to nurse her children afterwards or whether any kind of brassiere makes any difference in that.

I worked in China for five years, where the women begin to bind their breasts very tightly very young. We found a great many inverted nipples there, but we found in general that the women could nurse their children fairly well.

Chairman Holmes: Is there any further discussion?

If not, I will ask Dr. Miller to close.

Dr. Miller: I thank the doctors for their discussion of the paper.

First, in answer to Dr. Caviness' question about the size and type of breast in regard to the height and weight of the girl, I have some slides but I couldn't show them today for lack of time. According to my figures there is no relationship between the type or size of breast and the height of the girl. There was a definite relationship between the size of the breast and the weight of the girl. The large breasts occurred in the large girls. I can't answer the question as to whether they were more pendulous in the fat girls. I can go back and find out from my charts but I didn't work out that angle. I have an idea that the incidence of the different types of breasts would be the same, though.

In answer to the question about the massage of the breast, I am sure that massage breaks down supportive tissue, as a result of the history I obtained from these girls, anything that breaks down the weak supportive tissue of the breast—hence causing what we might call a stagnation of the breast during the pre-menstrual time or the post-menstrual season—is sure to cause pain.

If we can remember that the breast is a constantly active organ—it is stimulated before menstruation and after menstruation, it so to speak subsides—we know that the drainage of the breast towards the nipple has something to do (whether there is poor drainage or good drainage) with whether pain occurs or whether it does not.

I thank Dr. Ingersoll for her discussion. In regard to the type of brassiere, I haven't followed up these girls. They were in school and of course very few of them are married by this time, but I am sure that inverted nipples were caused by tight brassieres, because the girls gave practically that history. If you mash the breast down flat the connective tissue that holds the nipple erect is pulled down and the nipple is inverted, but lots of times these nipples could be extruded, those that seemed to be inverted, if examined carefully. With a little pressure the nipple could be extruded, and I feel sure they will be all right. Of course I can't tell whether they will be able to nurse the babies or not. (Applause)

Chairman Holmes: The next paper on our program is by Dr. C. A. Boseman of Pinebluff: "Common Field of Psychiatry and Internal Medicine." (Applause)

THE COMMON FIELD OF PSYCHIATRY AND INTERNAL MEDICINE

By Claude A. Boseman, M.D.

There was a time in the not too remote past when psychiatry was thought of as a phase of medicine detached and isolated, having little or nothing to do with the general practice of medicine, having little to do with the therapy of sick people and having nothing to do with life as it is ordinarily lived. Psychiatrists dealt with the insane and general practioners of medicine dealt with the sane, and their paths were thought of as divergent, the one ending in the realms of the philosophical or the occult, and the other in the realms of science. In fact, psychiatry was hardly thought of as a branch of medicine at all, and psychiatrists lived their remote, segregated and futile lives as keepers of the insane in what Dr. Karl Menninger termed "the castles on the hill". Unfortunately this attitude toward psychiatry still prevails in some remote sections.

However, the last several decades have witnessed a colossal change in the attitude of both the laity and the medical profession toward psychiatry. Happily, psychiatry is no longer thought of as remote but as a very vital, a very real and very determining factor in the treatment of disease, and

most of the larger hospitals have their psychiatric departments with their clinics and outpatient divisions as integral parts of the hospital functioning along with the other departments in an orderly and comprehensive study of human personalities. The "castles on the hill" have filled up their moats and let down their draw-bridges. And this change has come about not entirely due to the efforts of the medical profession but due as well to the interest of students of criminology, of sociology, of economics and of religion, who have turned at times to psychiatry for help. Judges of Juvenile courts and courts of domestic relations, social workers, school teachers and the clergy have all at times felt the need of advice from those students of the human mind and human personality who deal with the mind diseased. And so it is, in a sense that psychiatry has come into its own in the field of medicine by the back door of the sociological sciences. But psychiatry is, was, and always will be one of the branches of medicine, with which wide, general, humanized field we are all here today concerned.

We have been accustomed in the past, all too frequently, to think of mind on the one hand and body on the other. We have thought of human beings as quality, with a mind functioning in one sphere and a body in another. Psychiatry has been thought of as concerned with the mind and internal medicine as concerned with the body. That such a view is absurd needs no word from me. It is impossible to detach an aching tooth from the thoughts and feelings accompanying it as it is to think of a free floating emotion confined in a test tube.

In an article entitled "The Two Year Medical School and University Education," Dr. William De Berniere MacNider of the University of North Carolina recently made the following remarks:

"Likely one of the most difficult experiences of the human intellect is to be able, as Bacon suggested, to see things in their relationship one to the other, which is the main point. We have become so acustomed to exercise the analytical method in our consideration of people, institutions, and circumstances, that it has become increasingly unusual for us to attempt an understanding of a related whole. It is only when such relations can be evaluated in a composite fashion that the real value of a movement or organization can be understood and given the significance which it deserves." Only a great physician could have made those remarks, and only one who was acutely aware that a diseased kidney is not an isolated organ functioning in a laboratory but that it is an intimate part of a mentally integrated organism which also comprehends the beauty of the sunset.

And so it is that we cannot think, if we think at all, of a human being as anything other than a unity. One of the most comprehensive and illuminating contributions to the theory of medicine in the last generation is, I believe, that of Dr. Adolph Meyer, Professor of Psychiatry at the Johns Hopkins University, in the theory of psychobiology. We hear much

of the theory of psychobiology in psychiatric circles but not nearly as much as it deserves in general medical circles. This view holds obligatory the consideration of the mentally integrated nature of the human organism. Man is an organism composed of parts, of kidneys, lungs, spleen, liver, heart, etc., all working together in an orderly fashion through the intricate ramifications of the glands of internal secretion, the sympathetic, peripheral, and central nervous systems the whole forming what we term the total personality which encompasses not only the parts but all past experiences. It is a mentally integrated organism.

Hence the impossibility of consideration of a diseased mind apart from the biological organism, or of a diseased stomach apart from its psychical components. A man suffering from the tooth ache is in no sense the same personality as one who is free from pain A man suffering from a deep depression is quite a different physical organism from one who is happy and free from care. A man suffering from an inoperable carcinoma is quite different mentally, emotionally, and behavouristically from one whose body is sound. Every physical disease has its component mental state, and the two cannot be separated.

The beloved family physician of old was probably much more of a psychiatrist than an internist in the ordinary sense of the word, and rightly so. He was the father confessor, the economic advisor, and above all, the friend of all his clientele. And the passing of the family physician and his replacement by the ultra scientific scientist removes from our midst one of the brightest ornaments of our civilization. The artist is replaced by the artison. When the internist refuses to aid the hysterical, the psychasthenic, the obsessional patient and tells him his troubles are imaginary, he at once drives him to the ministrations of osteopath, the chiropractor, the Christian Scientist, or the vendor of black magic. The psychiatric ills of mankind are as real, as distressing, and as ruinous to the individual as any leprosy, great white plague, or black death in history. Were we all as aware as might be of this medical need we probably should not be witnessing in this state at this time the ridiculous spectacle of an osteopathic hospital treating nervous diseases with a pathetic termination in the law courts of the state.

But despite this the present is encouraging. One of the most stimulating papers presented to this society last year was one entitled "The Diagnosis and Treatment of Nervous or Functional Vomiting" by Dr. Walter R. Johnson of Asheville. One of the most interesting papers in a recent issue of *Southern Medicine and Surgery* was one entitled "Nervous Indigestion" by Dr. Paul F. Whitaker of Kinston. And in a recent issue of the Journal of the A. M. A. Dr. John H. Stokes of the University of Pennsylvania discusses comprehensively the psychiatric aspects of a dermatological condition. All three of these papers dealt with the psychiatric aspects of a disease in an interesting, stimulating and comprehensive manner. Neither of these physicians is a psychiatrist in the

ordinary sense of the word, but in a deeper, fuller, more comprehensive sense all of them are. These papers indicate, too, the direction in which the wind is blowing.

Thus, we arrive at the same goal by paths apparently divergent but ending all in the total personality. The common field of psychiatry and internal medicine is, of course, the human organism with all its infinite capacity to think, to feel, and to do. The psychiatrist and the internist are viewing the same problem from slightly different angles, with slightly different accentuations. Neither can disregard the other. The two fields are complementary. The beloved physician of the future, as in the past, will be the one aware that the keenest suffering of the patient dying from a malignant growth is not the physical pain, but the anguish at the thought of a destitute wife and children and will mix with his elixir a few drops of something which ministers also to the "mind diseased."

DISCUSSION

Dr. A. S. Rose (Chapel Hill): Mr. Chairman, I would like to say that I am very much encouraged in North Carolina, and I think we all should take encouragement, not only from the standpoint of Dr. Boseman's mighty fine paper, but further, I believe, that North Carolina is becoming more conscious of the mind and more conscious of the fact that we cannot separate mind and body.

Just within the last two years, we have formed a North Carolina Neuropsychiatric Society which now has forty members. They are not all psychiatrists. They are men who are interested in the work of such a society. Charlotte has a very active Mental Hygiene Society, and there has recently been formed a mental hygiene society in Durham and Orange Counties.

Further, I might say, it is also encouraging to see that in this section this afternoon there are three out of eight papers which bear on the nervous or mental side of disease. I hope some time, maybe next year, that there will be a section on neuropsychiatry.

I would like to ask Dr. Boseman a question as to whether he doesn't think that there is in addition to this common ground or common field of psychiatry and internal medicine, a common ground in terms of etiology, particularly etiology of symptoms and etiology with respect to certain diseases that the internists sees most often. I have in mind most particularly essential hypertension, Grave's disease, or hyperthyroidism. We all must admit the connection of the mind with a duodenal ulcer, spastic constipation—the mind certainly plays a part in these diseases.

I have been interested in seeing a number of different articles appearing now and then with respect to the mental—if I can use that word—etiology of such diseases. It is an extremely important subject, because possibly it will lead to effective therapy in these diseases that are rather difficult to handle medically.

Dr. Wingate M. Johnson (Winston-Salem): Mr. Chairman, this is such a worthwhile paper and so much along the line of my own thoughts, I want to pay Dr. Boseman the compliment of a discussion anyhow. One paper to which he did not refer in that regard (of course there are numbers of them) one of the best I know of is by Alfred Stengel. It was printed about a year or two ago in the *Annals of Internal Medicine* and was called "The Psychiatrist His Own Internist" in which he made the point that an internist simply had to know something about psychiatry or he couldn't get on.

I remember that particularly because I did something with it that I don't often do: I showed it to a layman. I had a prominent patient who had pneumonia. Following his pneumonia he had all sorts of mental upsets and the family got so perturbed about it that they wanted expert help called in. It hapened that I had just read that article, and it described his case exactly. It spoke of how often after a severe infection like pneumonia —particularly in elderly individuals—there would be a mental confusion which might persist for some weeks.

So I let the members of the family read this article. They were perfectly satisfied. The patient's mental state cleared up, and everybody was happy. (Laughter and applause)

Dr. W. R. Kirk (Hendersonville): I want to thank the doctor for his very, very fine paper along this line. I think the general practitioner is beginning to realize more and more the importance of the emotions in the treatment of disease, not only in his treatment of the disease, but the effect of the emotions as a cause of disease.

The fact of the matter is that when we speak of the brain and the body as being separated, it is not so. We think with all our cells, not with the brain alone, and we are beginning to realize now that the mind is not confined really to the brain or the cranial cavity, but the cells themselves do some thinking. The more we understand the effect of the emotions and principally the effect of fear in disease, the more successful the general practitioner will be in the treatment of his cases, I think. (Applause)

Chairman Holmes: Is there any further discussion?

Dr. J. M. Northington (Charlotte): Mr. Chairman, I think this is just the kind of paper that does the most good, because it shows the interdepedence of the different phases of medicine, and what one might call the different specialties of medicine. I would like to speak of it in somewhat reverse order.

It has been suggested in the discussion that it would be well to have a department—a section—on neuropsychiatry in this Society. I beg leave to differ from you. I think that is just the thing we do not wish to have. If there had been such a section, this paper would have been presented to it, and these specialists would have spoken to each other, and been heard by each other.

I believe that the present movement—the movement which has been on foot in this Society for at least twelve years—toward making fewer, rather than more, sections, is in the right direction.

There is an abundance of societies, special societies, in which neuropsychiatrists, ophthalmologists or orthopedic surgeons can talk to each other. In the State Medical Society I think we should all gather together and learn from each other, because there is no way of apportioning a man among the various specialists as we do with automobile equipment, go to one place for tires and tire repairs, another for batteries, another for body work, and another for various other things.

I would suggest to the essayist also that I believe the evidence will show this passing of the family doctor is mostly in the minds of the people who speak of it. I think it is non-existent. I believe that the tendency has long passed its zenith, and that there is a much larger proportion of all the work in medicine being done right now by the family doctor than was done ten years ago, just as it passed its zenith in England a good many years prior to the time that it passed it in this country. As usual, the practice of medicine, like everything else, is much mixed with economics. At a time when there was more money in most everybody's pockets, it became quite a fad for each person to pick out his own laryngologist when his throat became sore, and his own orthopedic surgeon when his feet hurt him—that is, unless he went to a chiropodist—and his own ophthalmologist if he had a cinder in his eye, his own neurologist or cardiologist, whichever he chose to take it to, if he felt that his heart beat a little oftener or a little more irregularly than it should.

I think that the family doctor is already coming back rapidly and not passing. That is, he is passing up and not down.

I received a book for review some time ago called the "Conquest of Cancer." Well, I have heard of the conquest of Cain—it is referred to in the Bible, and we speak now of the conquest of Ethiopia—but I wrote the author of this book and asked him how he could describe the conquest of a thing which hadn't been conquered.

I thoroughly appreciate the manner in which this matter has been presented to this Section and I earnestly trust that the future presentations by neuropsychiatrists to the Medical Society of the State of North Carolina will either be in this Section or in the General Sessions. (Applause)

Chairman Holmes: Is there any other discussion? If not, I will ask Dr. Boseman to close.

Dr. Boseman: I am very grateful to these various gentlemen who have discussed this paper. I think it indicates what is very evident in North Carolina: That is, an increasingly widespread interest in psychiatry, in the psychiatric side of things.

With regard to Dr. Rose's question, I think he is perfectly right, that there is a great similarity in the etiology of various frankly physical ail-

ments and in the etiology of frankly mental ailments. It would seem as if the patient has something or other in his psychic makeup which causes him to choose either a duodenal ulcer, say, on the one hand, and another patient to select schizophrenia to express the mixup in his mental life.

I think it was last year that a very interesting paper was read to the American Psychiatric Society by Dr. Lewis Hill of Baltimore concerning the treatment of essential hypertension purely psychiatrically. It happened that he was treating a case for a psychiatric condition over a long period, who at the same time was going to her internist on account of her hypertension. She went along, and as she progressed in her psychotherapy, her blood pressure came along right down, until at the end it was very much lower.

Recently I had a patient sent me from New York, who was suffering from hyperthyroidism. You know all the various manifestations: The increased pulse, the increased blood pressure, etc. This patient after treatment for about a month—he is still continuing treatment—had his pulse come down to practically normal, and his blood pressure to one hundred forty over eighty. Whether or not that will continue I don't know but at least it indicates something of the possibilities.

The point that I wanted to make, and the thing that I want to impress, is that at least ninety-nine one-hundredths of the patiens who need psychiaric treatment can't go to a psychiatrist. They are too few in North Carolina particularly, and the expense is generally too great for them to go to a hospital to stay for a while.

So it develops on the general practitioners of medicine to become psychiatrists themselves and to treat those people as best they can. (Applause)

Chairman Holmes: Our next paper this afternoon is to be presented by Dr. W. T. Rainey of Fayetteville: "The Constitutional Inadequate."

Dr. W. T. Rainey (Fayetteville): Mr. Chairman, I have enjoyed this program quite a good deal up until now. I am not a psychiatrist, but I appreciate that we all have to use a certain amount of it, no matter what we do.

As Dr. Boseman has just stated in his closing discussion, it is impossible for ninety or ninety-five per cent of our patients to get to a psychiatrist on account of the inaccessibility or on account of the expense, so that it is necessary for those of us at home to take care of these cases. I am very much like Lord Kelvine in one of his remarks which I want to quote: "When you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."

. . . Dr. Rainey then presented his prepared paper . . . (Applause)

THE CONSTITUTIONAL INADEQUATE

By W. T. Rainey, Fayetteville, N. C.

Constitutional inadequacy may be defined as a state of bodily and mental make-up which handicaps the individual in his adjustment of the various environmental stresses. The greater the degree of inadequacy, the more readily the individual presents evidence of what might be called decompensation.

It is to this group that I want to direct your attention. They are found in every branch of medicine and comprise a large percentage of our clientele. In our rush we are prone to underestimate their complaints and fail to give them the careful handling and sympathetic encouragement they require and must have to enable them to fight life's battles. It is the lack of these which causes them to pass into the hands of the quacks who, with their sales talk and manipulations, oftimes gain their confidence and lead them into a state of well being much to the chagrin of the medical profession.

This type of patient is very difficult to describe accurately, but a large number of them consist of those variously diagnosed as neurasthenic, psychoasthenic, hysteric and all those classed by the laity and profession as nervous. There is a difference of opinion relative to these terms by different physicians, but we all see them and I think roughly understand what patients are placed in this group. Cardiac and gastric neurosis, chronic appendicitis and intestinal intoxication are some of the diagnoses given them, yet under treatment they do not improve because we do not understand the underlying pathologic physiology. We all see patients in whom the appendix has been removed and sometimes this is followed by operations for adhesions, removal of the gall bladder and suspension, or perhaps removal, of the uterus, but the patient still complains of abdominal discomfort. This discomfort is the expression of some physical or mental decompensation. It may go into the field of allergy and include a few of the sufferers from hay-fever, asthma and certain skin conditions. There are others who will have a certain chain of symptoms with every disease to which they fall heir and it is this which makes them different from the ordinary sick person who has the same disease without the other clinical phenomena. The treatment may not be altered by these phenomena but we must recognize them and weigh their value. In the specialties one is apt to center his attention on the disease for which the patient seeks relief and disregard these seemingly irrelevant matters.

At present there is a tendency to refer these patients to neuropsychiatrists for opinion and study, hoping that they will solve the problem. Sometimes this will clear the condition but often it will only muddy the waters. The family physician must be prepared to handle the majority of them, and his success will be proportionate to his understanding of them.

We all see patients who are continually complaining of one thing or another while others may break only under relatively great stress. The degree of intellectual development does not enter into this condition. Those talented in the various arts often show evidences of constitutional inadequacy in spite of their intellectual qualities. So often the inventor, artist and even the athlete enter the group under discussion. Hyslop expressed it well when he said, "Individuals with constitutional inadequacy might be referred to as human beings made out of spare parts which have been poorly assembled, without regard to whether the spare parts fit each other or not. Hence, constitutionally inadequate individuals go clanking through life very much like the poorly assembled automobile which rattles its way down the street."

'Tis true that we rarely see an individual in whom all the systems are working in harmony at one and the same time. To many, the idea that the constitution is merely a sum total of the individual characteristics of the separate organs and tissues is not acceptable. Pende says that the constitution is the morphological, physiological and psychological resultant of the properties of all the cellular and humoral elements of the body.

The state of the constitution therefore does not depend solely upon the functional capacity of the separate organs, but must include the reciprocal correlations of its various parts as well.

Various methods have been devised as aids in determining the state of the constitution.

The older physicians placed great stress on what they called diathesis by which they meant predisposition to certain diseases. Due to an inability to express it in definite terms, it has been somewhat discarded but, after all, there may be something to it.

Draper and others in their investigations have shown by anthropological studies that certain type individuals are more susceptible to certain diseases and have been able to recognize an ulcer race, a gall-bladder race and a pernicious anemia race.

Constitutional inadequacy may be mental or physical or both. It must be remembered that no person is absolutely normal in all respects as we have our individual peculiarities and traits without which the world would be quite monotonous. Oftimes it is difficult to differentiate the normal from the abnormal as a few abnormalities per se are not sufficient to label one as abnormal. The mental and physical life history must be studied, the clinical picture outlined and the past history thoroughly gone into. The physician must understand these cases before he can get from them or their relatives the necessary information. We must remember the physical and mental instability associated, I might say, normally with adolescence and the climacterium. These periods of life are usually passed through with greater difficulty by those showing some form of constitutional inadequacy. Changes in the endocrine and vegetative nervous

systems may be found without any anatomic abnormality and their presence must be sought for.

Frequently severe infections in these patients will result in physical and mental disturbances. These may be a change in personality, gastro-intestinal mal function, nervous instability, cardiac distress, lowered resistance to infections or fatigability. Lax ligaments and poor muscle tone from the infection may result in painful feet, visceroptosis and skeletal posture defect associated with these disorders of body function. These patients may be emotionally unstable, have a reduced capacity for intellectual effort and cannot stand responsibility. They recognize their mental and physical incapacities and may date their beginning with the infection.

What, then, are some of the evidences of constitutional inadequacy, physical or psychic? Among the psychic may be mentioned : 1—Disorders of conduct as viscious habits, various intemperances and drug addiction; 2—Defects of emotional control as abnormal seclusiveness, phobias, irritability and mood changes; 3—Mental, as egotism, stubbornness and destructiveness.

The physical changes may be anatomical or physiological. Among the anatomical abnormalities are deviations of structure and proportion in comparison with the normal in view of the individual race and parentage. Of greater importance are such changes as abnormal palate, irregular spacing and disproportionate shape and size of the teeth, abnormal distribution of hair and secondary sexual characteristics of the opposite sex.

The physiological evidences are chiefly those referable to the vegetative nervous system and endocrines, the most important of which are vasomotor instability and cardiac and gastric neuroses.

Some form of migraine and convulsive states may be expressions of physiological inadequacy.

An individual markedly deficient in all three of these forms would be practically a hopeless cripple, but they do occur, usually, however, one predominates with slight or no changes in the others and they may go through life without decompensating making useful citizens. However, when put under a strain they frequently break.

The treatment of these cases is diffifficult and oftimes unsatisfactory. There is no form of therapy which can be applied to all of them. Examine them carefully and thoroughly. Satisfy yourself that they belong in this class before beginning any form of treatment. They are definitely sick and cannot be passed by slightly with a prescription for a tonic or sedative, though occasionally this is as good as any. Listen to their story with interest and avoid asking leading questions. They require careful handling and sympathetic encouragement, but be careful not to show too much sympathy. Every measure at our command from psycho-therapy through

diet, physio-therapy and drugs down to skillful neglect may be employed and then result in failure. Sometimes it is necessary to go into the fields of economics and sociology to bring about relief.

Again, let me say, give these patients your time and interest because their condition is real to them else they will pass from one doctor to another and finally end up with the quack unless nature intervenes and cures them.

DISCUSSION

CHAIRMAN HOLMES: Dr. Rainey's very interesting paper is now open for discussion.

DR. W. C. ASHWORTH (Greensboro): I was immensely interested in Dr. Rainey's paper. In the economic stress through which we passed for several years—it is better now I am glad to say—our emotional instability has increased to an enormous extent. So long as we can tread the primrose path, so to speak, so long as the exigencies of life do not come too thick and fast, we oftentimes function very well.

The thought that impressed me most in both of these papers was the folly and futility of undertaking to separate the physical from the mental. They dovetail, they cannot be detached. Even Shakespeare many, many years ago stated "Canst thou administer to a mind diseased? Canst thou pluck from the breast a deeprooted sorrow?" He knew the impossibility of it.

The more we contend with these individuals, the more we are convinced these two parts enter to make the whole, they cannot be separated.

CHAIRMAN HOLMES: Will someone else discuss this paper? If not, will you close, Dr. Rainey?

DR. RAINEY: I thank Dr. Ashworth for his discussion, and I do want to leave with you the idea that these cases are a problem. We all have them. They are seen in every branch of medicine, and I want to insist that you try to lead them back to a normal state of health.

Thank you. (Applause)

CHAIRMAN HOLMES: Gentlemen, at this time we will have the report of our Nominating Committee.

They present the name of Dr. George Mitchell of Wilson. He is nominated for Chairman of the Section for next year. What will you do with it?

DR. W. C. ASHWORTH (Greensboro): I move the nomination be accepted.

. . . The motion was duly seconded. . . .

CHAIRMAN HOLMES: Are there any other nominations? If not, all in favor of the nomination of Dr. Mitchell say "Aye."

The next paper on our program this afternoon is "Nervous Disorders Associated with Tuberculosis" by Dr. Karl Schaffle of this city.

. . . Dr. Schaffle then presented his prepared paper . . . (Applause)

NERVOUS DISORDERS ASSOCIATED WITH PULMONARY TUBERCULOSIS

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This subject is presented from the viewpoint of one one who is not trained in neuro-psychiatry but who has had to learn some of the elementary features of that field, in order to make any reasonable approach to succes in the treatment of tuberculosis. The title is so worded as to include conditions which have been present prior to infection as well as those which are usually listed among the complications of tuberculosis. Some of these conditions may have been predisposing to the latter disease or simply may have developed along with it as vitality has weakened and toxemia increased. We all know that probably a majority of our tuberculous patients are of the high-strung, restless or ambitious types, many of whom have succumbed to the disease through exhaustion of their nervous energy. Others may have inherited poor powers of resistance, a condition which is expressed in the nervous constitution as well as in susceptibility to infection.

Let us consider first the milder disorders, which are usually described as functional, and proceed to the definitely organic conditions remembering, however, that we may have mixtures and it is often difficult to determine where the functional leaves off and the organic begins. Among the first and most common of all is neurasthenia.

This term is applied to the condition of unaccountable fatigue, both physical and mental, with increased sensitiveness to all sensory impressions and consequent preoccupation with the same until normal effort is impaired and the slightest task is dreaded. Any chronic illness is likely to be accompanied or followed by neurasthenia sooner or later. In fact, its idiopathic existence has been doubted. Infections which persist for weeks, months or years, with the speeding up of metabolism by fever and impairment of function by toxemia, have profound effects upon the nervous system. In tuberculosis fatigue is usually one of the first symptoms, often antedating the pulmonary by long periods of time. Moreover, we seldom see the stage of emaciation of muscles, poor circulation, defective digestion and faulty elimination without marked signs of nerve exhaustion. This is characterized by irritability, modification of reflexes, sympathetic phenomena (flushes, sweats, large pupils), tremors, tics and even involuntary twitchings of entire extremities. The specific symptoms of cough

and dyspnea, frequently accompanied by pain in the chest, are themselves sufficiently distressing, particularly in disturbing the patient's rest, to wear down the nervous mechanism. Weir Mitchell's "rest cure" was beneficial in the majority of his patients who were suffering from nervous weakness. I have often wondered, since hearing him describe it years ago, how many of them might have shown evidence of pulmonary lesions if they had been examined by the X-ray in those days!

In addition to the disease aspect, we have a form of treatment or regimen, which is, to the majority of persons an abnormal way of life, consisting of enforced rest in confining and at times, depressing environment. Certain restless indviduals find it very difficult to adapt themselves to it, leaving sanatoriums before recovery is established, spending a few fretful weeks at home or at some other resort and returning in worse condition than they were before. This was observed, some years ago, in thousands of ex-service men who, through political influence, obtained transfers from one government hospital to another in various parts of the country until the matter almost became a public scandal. Of persons who find difficulty in adapting themselves to the sanatorium regimen, there are at one extreme those who are rather robust with active minds, who feel so well that such restriction seems to be "all foolishness," while at the other are those who are so toxic that they are highly irritable and find fault with everything about them and with every measure which is taken in their behalf. Fortunate are those patients who have some symptom which is sufficiently impressive to make them comply with regulations but not so alarming as to haunt them with fear. As in replying to new patients who ask about the extent of their involvement the words of Mercutio may be used but without their sinister implication, " 'tis not so deep as a well, nor so wide as a church-door, but 'tis enough."

Following closely upon neurasthenia, is a disorder which presents more spectacular features—hysteria. After months of being waited upon by physicians and nurses and the object of inquiry by visitors some patients become highly egocentric and subject to the petty jealousies of institutional life. Adults who have been in bed for some time are more or less influenced by such association and tend to revert to the traits of childhood and the sheltered existence. They feel hurt if they don't receive as many callers, flowers, books, packages of fruit or candy as those about them and are quick to take offense if teased, or to feel neglected if passed over too quickly or if some other patient is given more attention, even if it is obviously needed. This leads to insomnia and loss of appetite with conscious or unconscious exhibition of symptoms which will concentrate attention upon themselves. These may be simply an increase in the usual pulmonary symptoms or the development of digestive disorders but are likely to extend to any of a number of inexplicable and bizarre phenomena which we ordinarily regard as manifestations of hysteria. Of course, the typical hysteric has certain recognizable stigmata, including physical and

mental signs of immaturity and among the latter, chiefly, heightened suggestability. Such patients complain of the classical lump in the throat, especially if laryngeal tuberculosis is feared, of greater weakness than appears to be warranted, particularly of some special part as the upper or lower extremities, intense headache, impairment of vision, dizziness, palpitation and burning sensations of a vague character in the abdomen or other parts of the body. They may suddenly display violent temper tantrums or stage seizures indicative of epilepsy or mania. There may be a suggestive history in such cases, with accentuation of previous tendencies by disease and its treatment.

There are certain conditions which are evidently more than functional but in which it is difficult, at times, to find a definite lesion as a cause. Prominent among these is migraine, which is now classed among the allergies. In this connection it is interesting to note that the usual description of its victims correspond fairly closely to that of a certain type of "consumptive," frequently the subject of romantic literature—highly intelligent with finely chiseled features of the classical type, delicate pale skin of a transparent waxy character with the veins showing through, hair of fine texture and prominent eyes with dilated pupils, the angelic type.

Another nervous affection recently listed among the allergies, and like migraine probably antedating the tuberculosis by many years is epilepsy. Here, as in the preceding condition, there is likely to be a rather peculiar psychological picture with a tendency toward egocentricity and exaggeration with a lack of dependability and possibly even deceitfulness.

Facial and other tics particularly involuntary muscular contractions in the limbs and abdomen, may be listed here and are sometimes quite troublesome, resulting in physical exhaustion if allowed to continue too long. Persistent hiccough may be a serious complication.

Among the neuralgias, those of the intercostal nerves are frequent and are naturally confusing with pleurisy. There are also facial neuralgias which are usually due to one or more of the common focal infections. Pain in the shoulder with limitation of motion may be referred from pleural adhesions.

As to endocrinology it is a matter of common knowledge that tuberculosis is one of the most frequent causes of amenorrhea. This may be temporary until vigor is restored as a result of definite improvement in the pulmonary condition, it may be partial consisting of scant and irregular menstruation with long intervals between periods or it may be permanent in a patient who fails to improve or whose age approaches that of the normal menopause. In any of these phases there is likely to be considerable nervous disturbance expressed by weakness, dizziness, tremor, palpitation, indigestion, insomnia and anorexia. While the older glandular products may be of little value, such as corpus luteum or ovarian extract, there does seem to be some efficacy in the newer follicular hormones made known to

us under their various trade names. It is unfortunate that they are so expensive. With restoration of normal menstruation much of the nervousness disappears.

Increased sexual desire, due not to disease but to idleness and superalimentation, with its repression, is a troublesome factor in both sexes.

Thyroid disease is seen at times with tuberculosis but is more often mistaken for it because of nervousness, loss of weight, rapid pulse, night sweats, slight fever and even cough. A basal metabolism test, in addition to the routine examination, is usually sufficient for the differential diagnosis. A combination of calcium with iodine seems to be helpful when the two diseases coexist.

Before considering actual mental diseases we should think of those conditions which are more common and if neglected may lead to the former or at least nullify all our treatment. These are the anxiety states—homesickness, fear and worry and the greatest of these is worry. In some cases it is an expression of the general nervous condition which may have helped to inaugurate tuberculosis. Frequently it is simply an accompaniment with little reason for its existence. It does occur in those of sanguine temperament however, from such sufficient causes as financial stringency, disagreement with partners who are managing the patient's business, neglect on the part of the family to keep up correspondence or fear of the consort's infidelity. Here, it is necessary to gain the patient's confidence to the extent of getting the entire matter "off his chest," and then to help as far as possible by taking appropriate action. A useful measure is to send a report home to the effect that the patient appears to be "slipping somewhat," due apparently to something on the mind, the deails of which the writer does not care to know, but suggests that the situation be promtply adjusted so that the patient's progress toward recovery may continue.

Actual fear, while not as common as worry, is present in some cases, as in those who have an old fashioned horror of the diagnosis, or who have witnessed or learned of the death of another patient, in those who suspect the spread of their infection or the development of complications. Such anxiety states may cause, or result from, endocrine imbalance, with increase of andrenalin or sugar in the blood, with resultant deleterious effects.

Homesickness is often a serious obstacle to improvement, interfering with two of the fundamentals of "the cure"—rest and feeding. It may be ameliorated by the introduction of other patients of the same age and tastes who have gone through the same experience and are nearly well, affording diversion and encouragement. Books chosen for their particular appeal to the individual are helpful here, also the radio and, if permissable, knitting and certain other handicrafts.

Success, here and often in the entire management of the case, may depend upon where the patient is placed upon arrival. When one is obliged to make the necessary practical arrangements for the accommodation of new patients, they are found to be quite decidedly of one or the other of

two kinds. There are those who wish to go to a quiet place where they will not have to meet anyone, either other patients or churchly visitors and there are those who not only for financial reasons but because of their essential constitutions, actually prefer to join a group "sight unseen" because they would "simply die without company." We have here our old friends of the psychologist, the introvert and the extrovert. This brings up the question as to whether or not the so-called "shut-in" personality becomes more so when actually shut in physically. Naturally he may, and such accentuation may increase morbid tendencies. It has been my observation, however, that such persons make a better adjustment to the situation than their more gregarious brothers or sisters who can't be happy without their baseball talk or bridge games.

Except for terminal euphoria, the writer has had very little personal knowledge of actual mental disease occurring in the tuberculous, in an experience of twenty-seven years among various classes of people, including Latins, Slavs, Celts and Jews of the industrial centers, with their characteristic emotional patterns and the hundred per cent Anglo-Saxon of the South with his religiosity and childish exaggertions.

Some patients of an unstable temperament, who may have had little mental or nervous disturbance while engaged in a certain amount of physical and social activity, resent the restriction of "the cure" and, if potentially psychotic, may actually break down mentally. Such possibilities were recognized by the government as far back as fifteen years ago in the policy of assigning a specialist in neuro-psychiatry to every large tuberculosis hospital (and the frequency with which the insane become tuberculous was recognized by the assignment of at least one tuberculosis specialist to each neuro-psychiatric hospital). The duty of the neuro-psychiatrist was to maintain the morale of such patients as those described, by gaining their confidence and using appropriate psychotherapy, as well as to treat toxic delirium and to recognize promptly such manifestations of organic disease as symptoms of meningitis.

In a chronic disease with such troublesome symptoms as persistently recurring cough, and occasionally agonizing pain, it is obvious that care must be exercised in the administration of opiates. The danger of addiction to codein, however, considering the extent of its use does not seem to be very great, and if established is overcome usually without great difficulty. A recent product with a fanciful name, however, has proved to be quite pernicious in my own experience. While it is supposed to be superior to morphine or codein, I have seen it produce almost unbreakable habit formation within a comparatively short time.

I believe that there is more troublesome drug addiction than that involving narcotics in connection with sleep producing drugs of the coal-tar or barbital group. In the early days of prohibition veronal was used deliberately to produce intoxication, habitues deriving about the same effect as that of alcohol. With recent reports of profound anemia resulting from

the use of barbital and witnessing four attempts at suicide, one of which was successful, it seems very inconsistent that physicians and druggists should be checked up so strictly for prescriptions containing a little codein, when any layman may purchase a lethal amount of any of the barbital products for a nominal sum.

Now let us review briefly a condition with which most of us unfortunately are familiar and which has a definite organic lesion as its cause—meningitis. The tuberculous variety may be preceded by increasing irritability and malaise or start suddenly with intense headache basal, frontal or general, persisting in spite of all medication and usually accompanied by explosive vomiting, without relation to food, and by fever. Muscular rigidity follows, especially of the neck and back. The patient may lose consciousness or become delirious, with screaming. Kernig's sign is usually present. Obstinate constipation is a feature. Children are more commonly attacked than adults and it is often an expression of a general miliary involvement. The spinal fluid may be clear or slightly cloudy with an increased cell count, mostly lymphocytes, and tubercle bacilli may be found. McCrae mentions the frequency of a history of a fall.

A similar but apparently much less common syndrome which has proved to be quite puzzling, is that to which the term meningismus has been applied. This is characterized by the presence of several or all of the symptoms just mentioned, but in which the spinal fluid, except for increased pressure, is perfectly normal. According to Heiman[1], meningismus is synonomous with serous meningitis which Antell[2] describes as follows: "Serous meningitis is a term applied to a pathological condition which clinically resembles true meningitis, but in which the cerebro-spinal fluid is sterile. General serous meningitis may occur in the course of or following the general infectious fevers, such as pneumonia, influenza, rheumatism, etc. Cases have been reported following measles. Trauma, such as a blow on the head or a fall, may produce an attack. Since its first description by Dupre, in 1894, a certain amount of confusion exists in medical literature as to its nomenclature. Abt states that it would be far better if cases of meningismus were spoken of as serous meningitis. F. W. Law refers to it as aseptic meningitis, whereas Boyer uses aseptic meningitis only in cases that show signs of meningeal irritation which are produced by the introduction of foreign substances, such as sera, into the spinal canal. Boyer attempted to simplify matters by differentiating meningismus from serous meningitis, meningismus being applied to cases in which the cerebro-spinal fluid is increased only in pressure, otherwise, chemically and microscopically, it is negative. He states, that although authorities still assert that in some cases of meningismus 30-40 or more cells may be found in the fluid, he nevertheless suggests that meningismus should refer to conditions in which the patient presents clinically the symptoms and signs of meningeal irritation, of variable intensity, but in which lumbar puncture reveals the fluid to be practically normal, except that it flows under increased pressure."

McCrae[3] says, "Serous meningitis is an ependymitis causing a serous effusion into the ventricles, with distention and pressure effects, it may be compared to the serous exudates in the pleura or synovial membranes. It is not certain that the process is inflammatory and Quincke likens it to angio-neurotic edema.

"Both children and adults are affected, the later more froquently. In the acute form the condition is mistaken for tuberculous or purulent meningitis. There are headache, retraction of the neck and signs of increased intracranial pressure, choked disk, slow pulse, etc. Fever is usually absent, but there are cases with recurring paroxysms. In the chronic form the features are those of tumor—general, such as headache, slight fever, somnolence and delirium; and local, as exophthalmos, optic neuritis, spasms and rigidity of muscles and paralysis of the cerebral nerves. Exacerbations occur and the symptoms vary in intensity. Recovery may follow and some reported cases of disappearance of symptoms of brain tumor belong in this category."

Kilduffe[4] commented as follows: "Concerning this condition—first described and named by Quincke—some confusion exists, both as to its occurrence and as to what conditions shall be so designated. Comparatively little is to be found regarding it in the literature, in all probability not because it is so infrequent, but, because perhaps it is not recognized or reported as such. It is possible that, were it looked for, the condition would prove far from infrequent. Some confusion appears to exist also as to the terminology, the terms "toxic meningitis" and "sympathetic meningitis" being applied to it, although, if we define it to mean simply a state of irritation without a definite inflammatory reaction, the term meningitis serosa is probably to be preferred."

Strauss[5] noted that, "The cerebro-spinal fluid may react in the presence of a nearby suppurative process and show turbidity in the fluid and an increase in pressure, in albumin and in cells but without the presence of bacteria. Early signs of meningitis may be present. This condition has been termed meningitis sympathetica."

In 1925 Wallgren[6] of Sweden, described a "new infectious disease of the central nervous system" resembling tuberculous meningitis, to which he gave the term aseptic meningitis.

In 1929, Viets and Watts[7] of Boston, reported five cases of acute aseptic lymphocytic meningitis, lasting from three to six weeks, with recovery without paralysis.

Armstrong[8], of the U. S. Public Health Service, in animal experimentation with material from the St. Louis epidemic of encephalitis (1934), discovered a filterable virus which caused lymphocytic choriomeningitis, and probably the same factor responsible for the cases of Wallgren, Viets and Watts. This work was confirmed by Rivers and Scott[9] of the Rockefeller Institute in 1935, and by Findlay, Alcock and Stern[10] of Edinburgh, in March of this year.

According to Greenfield and Carmichael[11], "It is usual to class meningeal inflammation and irritation as:

(1) Septic meningitis, when pus cells and organisms are present in the cerobro-spinal fluid.

(2) Serous meningitis, when a clear fluid contains an excess of cells but no organisms.

(3) Meningismus, when the fluid is normal.

This classification rests more on clinical than on pathological grounds, chiefly in fact on the observation that in cases of types (2) and (3) the symptoms subside rapidly after lumbar puncture. It will be remembered that this is also true in mumps meningitis, and usually in typhoid meningitis, but when the cause of the meningitis is known, the disease is not classified as serous meningitis. "Meningismus" is indeed a purely clinical term, and its relationship to any morbid conditions of the meninges is extremely vague." Further, "The reason for the excess of cerebro-spinal fluid in these cases is not altogether clear. We can no longer accept the suggestion inherent in the name "serous" meningitis, that the fluid is poured out by inflamed meninges. If there is excessive production it must be due to alterations in the intracranial venous pressure, and naturally any sinus thrombosis would give rise to this. It seems likely, from the beneficial results of lumbar puncture, that in the majority of cases there is no excess in the formation of cerebro-spinal fluid, but rather a defect in its absorption."

In Boyd's[12] Pathology of Internal Diseases we find that "in serous meningitis there are no bacteria and the sugar content is normal. The cell count may be normal or somewhat increased. In young children there may be all the symptoms of acute meninigitis, but the only change in the fluid may be a marked excess, quickly relieved by lumbar puncture." In the same work under tuberculous meningitis, the spinal fluid is described as "clear or slightly milky, a web of fibrin forms on standing, there is a well-marked lymphocytosis with a varying number of polymorphonuclears, the protein is considerably increased, the sugar is low, though usually not absent, the chlorides are lower than in any other condition, tubercle bacilli can be found if the search is sufficiently prolonged."

The following case is reported as an illustration of the difficulty which exists in the classification of such phenomena as those which have been described. It suggested at first a distinctly organic or pathological process, but later, features which strongly suggested hysteria were superimposed.

G. F., white, female, student, age 20: Admitted to sanatorium May 26, 1935, with a diagnosis of tuberculosis; pulmonary, chronic, active, moderately advanced; who had been referred by her family physician, with the significant remark that, "her condition was that of one who was completely apathetic." Her history was irrelevant except for dysmenorrhea, and for five years confinement in an orphanage where she was required to do a certain amount of menial work and learned to be evasive and deceitful. She

was ordered on bed-rest but soon became notorious for breaking regulations and was out of bed a great deal, visiting other patients and behaving in a rather silly and unresponsive manner when spoken to about it. In September she developed symptoms of appendicitis, which had been smouldering for some time, and was operated on. About two weeks after the operation she was out of bed and heard someone coming whom she thought was the surgeon. She ran for her bed and slipped on the waxed floor, striking the buttocks with considerable force. She said nothing about this accident to any of the medical staff and did not mention the pain which followed, but it was noted by another patient who reported it to the nurse. About a week later on the evening of October 15, during rounds, this patient was found to have a peculiar flush of the face, deeply livid and extending over both cheeks and the bridge of the nose in the pattern suggestive of erysipelas, there was, however, no elevation of the margin above the surrounding skin and no fever. As usual she replied in monosyllables to the effect that she was not feeling so well, but nothing new was discovered in either chest or abdomen. Passing along to other patients, the examiner was recalled to the girl's bed ten minutes later to observe a convulsive seizure in which the extremities were all held stiff, fingers out straight and the head drawing back slightly. The patient appeared to be unconscious. This condition persisted for a half-hour when morphine and atrophine were given, a special nurse assigned for the night and more morphine and atrophine administered during the night. This resulted in some relaxation but the next morning there was vomiting, free perspiration and marked stiffening of all limbs and retraction of head and shoulders, with apparent unconsciousness. A tentative diagnosis of tuberculous meningitis was made. A lumbar puncture was done the same evening and the spinal fluid gushed out under considerable pressure but was found to be perfectly normal. The patient then became conscious and relaxed but the next day there was a return of the body rigidity and vomiting, with much restlessness and moaning. The patient became very weak and required stimulation, this was followed by screaming and crying which required sedatives. She then improved somewhat but on the nineteenth, rigidity and unconsciousness again became so marked that another spinal puncture was performed. Learning of the fall the possibility of traumatic meningitis occurred to us. Again the pressure was above normal, 10m.m.+ (Hg.); reaction-alkaline; Sp. Gr., 1.009; cell count-3 per cu. m.m.; albumin, none; suggar++; Gram's stain shows nothing; no tubercle bac. found; quantitative sugar, 62.38 mgm.; quantitative protein, 41.5 mgm.; celloidal gold-no curve; chlorides, 728 mgm.; culture sterile; globulin negative; Wassermann negative. In other words, these findings were practically normal.

(Boyd[12] has found the estimation of the chlorides to be the most valuable of the chemical tests, the normal figure being from 0.72 to 0.75, falling in tuberculous meningitis to 0.65 or 0.60 or even 0.50, seldom seeing a reading above 0.65 per cent in tuberculous meningitis.)

This puncture was followed by improvement but considerable backache, and on October 24, another spinal puncture was done because of a return of meningitic symptoms. The patient then became very quiet and comfortable and was able to take more nourishment than previously, which had been very little.

She then got along fairly well until about a month later when she became very angry because a nurse discovered that she had heated her thermometer to 103° while her temperature was actually normal. The patient overheard the nurse's report and shortly after developed opisthotonos to the extent of indicating another spinal puncture, which was done, and the examination of the fluid again proved it to be perfectly normal including the cell count. The patient improved after this to the extent of being given bath-room privileges but a month later again developed symptoms. This monthly periodicity was suggestive and the history of dysmenorrhea was remembered together with the patient's peculiar mental make-up and it was decided to treat the case as one of hysteria. She wanted a spinal puncture but it was purposely withheld and she got along just about as well by administration of bromides and some morphine.

The patient's pulmonary condition was not adversely affected and she left the sanatorium for economic reasons after two or three weeks of further observation, during which she had no return of the nervous phenomena.

Recent reports from her home are to the effect that she is fairly well and has had no more "nervous spells."

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SECTION ON PEDIATRICS

WEDNESDAY, MAY 6TH, 2:00 P.M.

By DR. J. A. SHAW, *Chairman*, Fayetteville

DR. M. Y. KEITH, *Chairman pro tem*

CHAIRMAN: I will ask the session to please come to order. It is indeed with much regret that I announce that Dr. Shaw, your Chairman, is not present, and Dr. Shaw asked me to preside in his place. Now, before we start the session, may I ask that we get through with as much of the business part of our meeting as possible, so I would like for Dr. J. B. Sidberry to act as Chairman of the Nominating Committee for your next incoming Chairman, and I will appoint Dr. Butler, of Winston-Salem, and Dr. Elias, of Asheville. And then I would like, as Dr. Root has suggested, because of this emergency we are now in, to make a recommendation, or is there a recommendation, after I have a few words and let you decide for yourselves, that we should have a Vice-President and a Secretary of our Section, in case that the President falls down, or some emergency arises as has happened today. So I would like, if it is agreeable with Dr. Root, to make a motion that we elect a Vice-President and a Secretary to our Society to meet the requisites that may come up as has happened today. Dr. Root, is that your idea?

DR. ROOT: Dr. Keith, my idea was to appoint a Vice-Chairman and a Secretary for the Section on Pediatrics of the State Medical Society. And that would be my motion. I make a motion, Mr. Chairman, that a Vice-Chairman and a Secretary be appointed for the Section meeting on Pediatrics of the State Medical Society.

DR. ————: Appointed or elected?

DR. ROOT: Elected.

CHAIRMAN: Is there a second to the motion?

Motion seconded. Carried.

CHAIRMAN: Now, according to Dr. Root's motion, is there a second to his motion that we have a Secretary.

DR. MCBRYDE: I think it would be very good to have the Vice-Chairman to act as Secretary. I see no reason for a third person. I understood that he wanted one person to act as Secretary and Vice-Chairman, rather than make two additional offices.

DR. ROOT: I should think that one person would be all that is necessary.

Motion seconded. Carried.

DR. ROOT: May I suggest that the Nominating Committee which you will appoint take care of that appointment?

Dr. Root: Yes.

Motion seconded. Carried.

Chairman: Before we begin our scientific program, may we have a word from Dr. Ashe relative to the Virginia Medical Society coöperation and invitation to us.

Dr. Ashe: I stated that Dr. Davis suggested that the members of the Virginia and South Carolina Pediatric Societies be invited to meet with us in joint meeting, and suggested that the Chairman extend them the privileges of the floor.

Chairman: You have heard the resolution. Is there any discussion? (No action.)

Dr. ————: I move that that Committee appointed to nominate officers repair at their own convenience and make such nominations.

Motion seconded. Carried.

Chairman: We are always glad to have any of our fellow members from Virginia or South Carolina or other neighboring States. Is there any further business that should be attended to before we proceed with our program? As I started to say in the beginning, it is with much regret that your present Chairman cannot be with us, on account of illness, and he has asked me to read his paper; and certainly it is a timely paper and a paper that we are much concerned about—whooping cough and the prevention of whooping cough.

PERTUSSIS VACCINE

By Dr. J. A. Shaw, *Chairman,* Fayetteville

About two years ago I became more than ever whooping cough conscious, but it was a little too late for me personally. Before I got the Sauer's vaccine that I had ordered, both of my children were coughing. After three months I was more than ever convinced and more than ever anxious for something that would eleviate or prevent whooping cough. If any of you have gone through the personal experience of a nine months old child and three year old child with whooping cough at the same time, you can appreciate what I mean. Since this time I have given Sauer's vaccine to as many babies and small children as I could.

This paper is not intended to explain what Sauer's Vaccine is, as Dr. Sauer does this, nor is this paper intended to sell any one on the necessity of using whooping cough vaccine. With the known mortality rate of whooping cough especially in children less than one year old, and the morbidity of whooping cough in children of all ages, I do not believe there is any doubt in anyone's mind as to the need of such a vaccine, especially a vaccine that gives no reaction of any serious consequence and which does to a great extent, prevent whooping cough.

As I looked back over the past years and saw the number of tombstones erected after the death of many so called cures, vaccines, etc., that I had one time thought promised a lot and some that I had used to some extent, I wondered if perhaps this whooping cough vaccine would be added to this list. In my own experience I had been especially pleased with the results obtained, and I desired to find out what others thought. To this end, and to procure a paper for this Society, I wrote about fifty dctors, mostly pediatricians who kept good records, heads of some of the leading Clinics and leading practitioners. Of this number forty-four replied. Before giving the results of this survey, I would like to say just a word about my own experience. I have given the vaccine to about two hundred children and of this number one child developed whooping cough, a very mild case, in less than one month after finishing the vaccine. His brother who had had the vaccine earlier did not develop whooping cough. We have had two rather large epidemics in Cumberland County during the past two years. Lots of cases were never reported. Adults even had the disease. Of all the cases I had vaccinated, none of them contracted the disease, and while I am sure that a large percentage of them were exposed, I am unable to say absolutely that I had more than fifteen exposures but of this number, none of them, after a period of four months, contracted whooping cough.

In sending out the questionnaire I neglected to include a question as to the number of known exposures because, from my own experience, I knew it would be a hard question to answer. However, upon receiving the answers, I found that some of the doctors gave me this information with examples and case histories. I decided at the last minute to write again, which I did, and of the fifteen doctors written, a good many replied. While some knew of no known exposures others gave me their results.

The first question asked in the questionnaire, "Do you use Pertussin vaccine?" To this question thirty-seven replied that they did and thirty-five of these were using Sauer's and two another vaccine.

The second question was "Approximately how many patients have been vaccinated by you or your Clinic?" The following figures are from those using Sauer's. 2950 cases were reported having had Sauer's vaccine besides the two thousand cases that Dr. Sauer reported in his questionnaire, making a total of 4950 cases.

The third question, "How many known cases of whooping cough followed, and how long after?" There were thirty-one known cases of whooping cough reported following the use of Sauer's. Many of those reporting stated that there had been no outbreak of whooping cough in their vicinity during this period. Of the cases reported as having had the disease, the average time was six months after vaccination. Two of these were only three months after vaccination. Two men reported very severe cases. A good many reported light cases and the severity of the other cases was not mentioned.

The next question asked was "Reactions to vaccine, if any." Out of the 4950 cases, there was not a single report of a serious reaction. One doctor reported eighty-one cases, giving a detailed report which he had kept, with only eighteen out of the eighty-one showing no reaction whatsoever, two having fever 104, others slight fever after the second series but none had had any reaction after the third series. A great many of the doctors reported "practically no reaction."

The fifth question, "At what age do you use it, and how close to any other vaccine?" In this survey I found that there was some division of opinion. From three months up to seven years about covered it. There were ten at six months, four at three months, four at four months, seven at eight months, and three after a year old. The others gave it according to their own preference in certain cases or the preference of the mothers. Some thought diphtheria more important and some that whooping cough should come first. As to how close to any other vaccine, one man stated one month, another any time. Others two, three and four months. Dr. Sauer, of course, advocates giving it no nearer than four months to any other vaccine.

The question was asked "What would be your reaction to giving the whooping cough treatment as early as two months?" The use of the vaccine as early as two months did not have many favorable replies. The majority referred to Dr. Sauer's work on two months old babies as not giving good results. Dr. Sauer has given it to six hundred infants two months and younger. It seems to be a question as to whether or not the young infant could develop sufficient immunity. If given at this age it would be very hard to get a mother to allow you to repeat the vaccine at a later date. On the other hand the greatest mortality of whoping cough comes before the end of the first year and if it could be given early a great many of these cases might be prevented. Dr. Sauer gave only 6 c.c. to his first cases under two months of age. He did not get any reaction. It may be that as the use of the vaccine increases and most children have it, the danger to the infants will be lessened because it will not be brought to them by older children. In families with older children who have not had the whooping cough vaccine or the disease, it might be well to give it earlier. Several replies indicated that reactions were less in younger babies.

As to repeating the vaccine, the universal idea was that there was no necessity; that after six years of age the child could go through whooping cough and, in a measure, take care of himself especially in view of the fact that he would have some immunity from the vaccine. Several replies stated that even if it had never been given the use of the vaccine after six years of age was not necessary. I have given the vaccine to a few children six years old, and I believe that one is justified in giving it to any child who has not started to school.

As to the use of the vaccine after the onset of the disease, ten were

using Sauer's; others were not using the vaccine in treating the disease. Dr. Sauer advised the same does as given for prophalaxysis but given three days apart instead of a week. Some reported that they got some improvement by using the vaccine but as a rule the replies were very indefinite and not favorable.

After getting the above replies and a number of remarks like those from Dr. Tom Watson who kindly allowed me to report the cases, I was prompted to write fifteen other doctors and ask them about their known cases of exposure. Dr. Watson stated that the first two cases to whom he had given the vaccine were two children, one in a family of four and one in a family of three, both children being asthmatic. About a year later whooping cough appeared in both families, and the three children in one and the two in the other who had not had the vaccine had severe cases of whooping cough, but the two who had been vaccinated, although continually exposed to the disease, did not develop any signs of it. In the reports from the fifteen doctors I received sixty-three known cases of exposure without any of them contracting the disease. In fifteen of my own cases of known exposures only one contracted the disease one month after being vaccinated.

The fact that this large percentage of men are using the vaccine and report such faith in it and respect for it, together with the cases of known exposures coming from men who have kept accurate records, makes me believe more than ever that we have an aid now in preventing whooping cough.

Under remarks many said that they had not made up their minds about the vaccine. Others replied that they considered the vaccine a great step in preventive medicine. Dr. Sauer reports that he is now using 10 c.c. dosage in children over three years of age. The possible reasons for some of the failures, according to Dr. Sauer, are:

1. The quality of the vaccine (antigen content) is influenced by the strains used, and the concentration of the vaccine.

2. The potency of the vaccine (at the time of injection), is reduced if the vaccine was not kept cold.

3. The dosage for children older than four years, may require somewhat more than a total of 8 cc.

4. Illness (*eg.*, measles) just before or after the injection, probably decreases the immunity response.

As to those who replied that they were not using any vaccine, two of these very definitely did not have any confidence in whooping cough vaccine; one, and one of the best men in the country, stated that he gave the vaccine with great reservations and only after explaining to the mother that it was, to his mind, of doubtful value. In a very small number of cases reported, he had several to develop whooping cough six months after using the vaccine. Several men, some at the head of large clinics, stated

that they had not had enough experience with the vaccine to give an opinion of any value. Others stated that it had not been used in their Clinics.

CONCLUSIONS

1. A large per cent of the profession is using Sauer's vaccine; some of these with reservations.

2. From a total number of this series of 4950 cases vaccinated, only thirty-one had developed whooping cough up to the present time and to the best knowledge of their phyisician.

3. That out of sixty-eight known cases of exposure (based upon reports from fifteen doctors,) and fifteen of my own, only one developed whooping cough and that one less than a month after finishing the vaccine. It was only a mild case.

4. The time for giving the vaccine varies, half giving it about six or seven months.

5. That there is little danger of serious reaction to the vaccine.

I wish to thank all those who replied to my letters and helped me in securing the statistics for this paper.

CHAIRMAN: We will now hear from Dr. Root, who will read a paper on Poliomyelitis.

THE POLIOMYELITIS EPIDEMIC IN NORTH CAROLINA

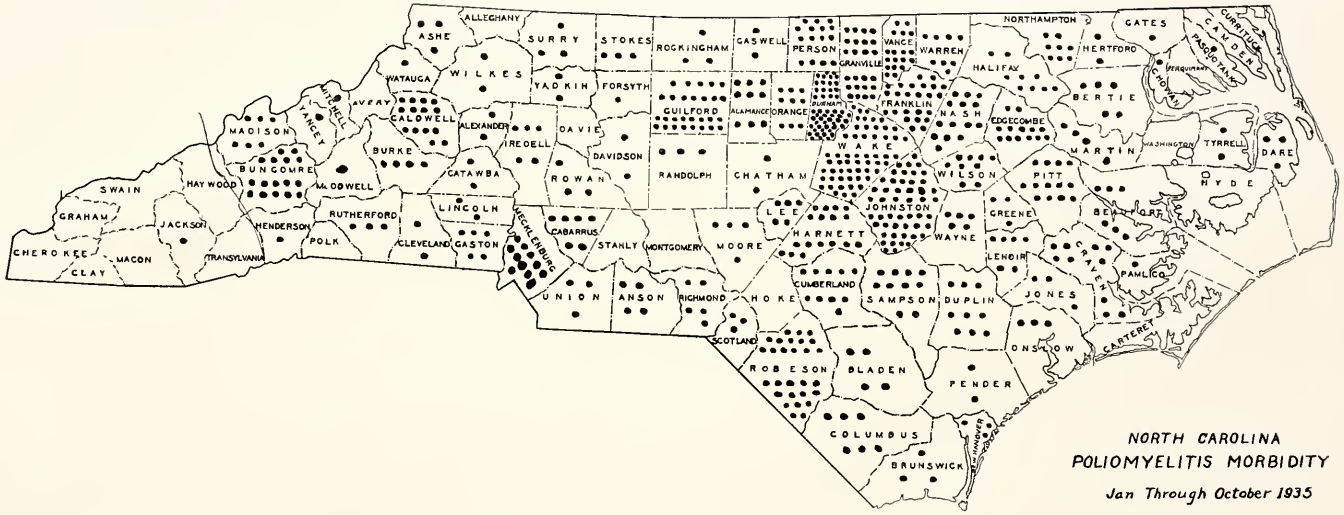
By ALDERT S. ROOT, M.D.

Poliomyelitis belongs to a group of morbid disorders which are known as "virus diseases." Just what the morphology of a virus is no one knows. It may be an ultramicroscopic organism passing through a porcelain filter so small that it cannot be detected by the modern microscope,—it may be a protozoa or possibly elaborated toxins which attach themselves to the protoplasm of cells just as diphtheria toxin does in neglected cases of this disease.

Poliomyelitis has been recognized as a disease entity since 1840 when it was accurately described by Medin.

Several outbreaks were recorded before 1885, and as time has passed and the population of the country has increased the disease has become more and more prevalent, and epidemics of greater or less severity have occurred with increasing frequency. The largest of these were in New York City in 1916, when over 9000 cases were reported and in Southern California in 1934, when about 4000 cases occurred.

While no state in the Union has been free from its visitation—only isolated cases have been noted in the states south of the Mason-Dixon Line, until this past year when its occurrence in North Carolina and Virginia reached epidemic proportions.



NORTH CAROLINA
POLIOMYELITIS MORBIDITY
Jan Through October 1935
By Onset

Prior to this epidemic the number of cases in North Carolina over a period of 10 years averaged 72.8 per year. The largest incidence was in 1929 when 133 cases were reported.

In so far as climate is concerned the epidemic to be described may be considered further South than any which has occurred in the United States. It is true that the degree of latitude for this State and for Southern California is about the same but the mean summer temperature in North Carolina is much higher than that of the more equable climate which prevails in the latter State.

SEE MAP OF STATE

The outbreak began with 8 cases in April, originating in Wake County. In May there were 44 cases reported, in June 198, in July 229, in August 81, in September 56—a total of 622 cases. The peak was reached with 63 cases in the week ending June 29th, the hottest month of the year—thus conforming to most of the other recorded epidemics.

With Wake County as a center, the disease spread to the adjoining counties but the epidemic was largely confined to the east-central part of the State. It travelled northward along the two main North-South Highways into Virginia where it reached epidemic proportions. Over 600 cases were reported in Virginia.

The symptomatology of the cases seen last summer differed little from that usually described, except that the children were not so sick. The onset was usually abrupt with symptoms of any acute infection. Vomiting was frequent with temperature 101 to 103. Drowsiness was often present, but not prostration except in the bulbar type. After 24 hours older children complained of headache, but not often was pain in the spine and legs noted. Stiffness of the spine, the most important symptom for making an early diagnosis, was always present. This is best elicited by gently pressing the head towards the knees while the patient is in a sitting position. Such a patient when assuming the sitting posture will brace his back by leaning on his arms. Kernig's sign was not often present and the patella reflexes were usually increased. As usual there was moderate leucocytosis with the cerebrospinal fluid under pressure and containing from 20 to several hundred cells. If the case did not progress to paralysis the symptoms gradually cleared up after a week or 10 days. The stiffness of the neck was one of the last signs to disappear. If the case were paralytic the paralysis occurred usually on the third day after onset, reaching its maximum several days later. With the onset of paralysis of the lower extremities the patella reflexes disappeared.

In the bulbo spinal type the facial nerve as usual was more often involved, and next the extrinsic muscle of the eyes. The fatal cases had paralysis of the diaphragm and intercostal muscles.

It was our impression from the sick children we personally saw that there were about 8 non-paralytic cases to each one paralyzed.

It is unfortunate that there is not some simple procedure or test which would enable a physician to identify poliomyelitis at the beginning of the

NORTH CAROLINA—CASES OF POLIOMYELITIS—HAVING ONSETS
JANUARY TO SEPTEMBER, INCLUSIVE (Reported through 10-15-35)

Age Group	*WHITE*			*NEGRO*			*INDIAN*			*UNKNOWN COLOR*			*TOTAL*			PERCENTAGE
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Distribution*
Under 1 yr.	12	17	29	7	13	20	0	1	1	0	0	0	19	31	50	8%
1-4	118	82	200	27	32	59	2	3	5	1	2	3	148	119	267	43%
Total Under 5	130	99	229	34	45	79	2	4	6	1	2	3	167	150	317	51%
5-9	87	61	148	10	9	19	0	4	4	0	0	0	97	74	171	27%
Total Under 10	217	160	377	44	54	98	2	8	10	1	2	3	264	224	488	78%
10-14	24	24	48	3	3	6	1	0	1	0	0	0	28	27	55	9%
15-19	14	13	27	3	3	6	0	1	1	0	0	0	17	17	34	5%
20-24	7	4	11	0	1	1	0	0	0	0	0	0	7	5	12	2%
25-34	6	2	8	1	4	5	1	0	1	0	0	0	8	6	14	2%
35 and over	4	4	8	7	1	8	1	0	1	0	0	0	12	5	17	3%
Unknown	1	0	1	0	0	0	0	0	0	1	0	1	2	0	2	Under 1%
TOTAL	273	207	480	58	66	124	5	9	14	2	2	4	338	284	622	100%

NORTH CAROLINA—POLIOMYELITIS—1935
CASES HAVING ONSETS JANUARY-SEPTEMBER, INCLUSIVE
(Reported through 10-15-35)
AGE AND SEX DISTRIBUTION OF ALL CASES

Age Group	*Population 1930 census*	*TOTAL CASES*	*Rate per 100,000*	*Population 1930 census*	*MALE CASES*	*Rate per 100,000*	*Population 1930 census*	*FEMALE CASES*	*Rate per 100,000*
Under 1 year	74,777	50	66.87	38,046	19	49.94	36,731	31	84.40
1 to 4 years	316,373	267	84.39	160,136	148	92.42	156,237	119	76.17
Total Under 5 years	391,150	317	81.04	198,182	167	84.27	192,968	150	77.73
5 to 9 years	427,112	171	40.04	215,216	97	45.07	211,896	74	34.92
Total under 10 years	818,262	488	59.64	413,398	264	63.86	404,864	224	55.33
10 to 14 years	382,298	55	14.39	193,502	28	14.47	188,796	27	14.30
15 to 19 years	360,640	34	9.43	178,610	17	9.52	182,030	17	9.34
20 to 24 years	304,847	12	3.94	144,482	7	4.84	160,365	5	3.12
25 to 34 years	437,092	14	3.20	208,151	8	3.84	228,941	6	2.62
35 and over	865,018	17	1.97	435,983	12	2.75	529,035	5	1.16
Age unknown	2,119	2	.....	1,082	2	.....	1,037	0	.....
TOTAL	3,170,276	622	19.62	1,575,208	338	21.46	1,595,068	284	17.80

NORTH CAROLINA—POLIOMYELITIS—1935
CASES HAVING ONSETS JANUARY-SEPTEMBER, INCLUSIVE
(Reported through 10-15-35)
AGE AND SEX DISTRIBUTION AMONG WHITE RACE

Age Group	*Population 1930 census*	*TOTAL CASES*	*Rate per 100,000*	*Population 1930 census*	*MALE CASES*	*Rate per 100,000*	*Population 1930 census*	*FEMALE CASES*	*Rate per 100,000*
Under 1 year	52,740	29	54.99	27,004	12	44.44	25,736	17	66.06
1 to 4 years	221,067	200	90.47	112,809	118	104.60	108,258	82	75.74
Under 5 years	273,807	229	84.64	139,813	130	92.98	133,994	99	73.88
5 to 9 years	294,226	148	50.30	149,221	87	58.30	145,005	61	42.07
Under 10 years	568,033	347	66.37	289,034	217	75.08	278,999	160	57.35
10 to 14 years	262,258	48	18.30	133,502	24	17.98	128,756	24	18.64
15 to 19 years	243,507	27	11.09	121,795	14	11.49	121,712	13	10.68
20 to 24 years	208,294	11	5.28	100,136	7	6.99	108,158	4	3.70
24 to 34 years	313,978	8	2.55	151,792	6	3.95	162,186	2	1.23
35 and over	637,703	8	1.25	323,388	4	1.24	314,315	4	1.27
Age unknown	1,175	1	.....	623	1	.....	552	0	.....
TOTAL	2,234,948	480	21.48	1,120,270	273	24.37	1,114,678	207	18.57

NORTH CAROLINA—POLIOMYELITIS—1935
CASES HAVING ONSETS JANUARY-SEPTEMBER, INCLUSIVE
(Reported through 10-15-35)
AGE AND SEX DISTRIBUTION AMONG NEGRO RACE

Age Group	*Population 1930 census*	*TOTAL CASES*	*Rate per 100,000*	*Population 1930 census*	*MALE CASES*	*Rate per 100,000*	*Population 1930 census*	*FEMALE CASES*	*Rate per 100,000*
Under 1 year	21,518	20	92.95	10,779	7	64.94	10,739	13	121.05
1 to 4 years	93,177	59	63.32	46,261	27	58.36	46,916	32	68.21
Under 5 years	114,695	79	68.88	57,040	34	59.61	57,655	45	78.05
5 to 9 years	130,143	19	14.60	64,644	10	15.47	65,499	9	13.74
Under 10 years	244,838	98	40.03	121,684	44	36.16	123,154	54	43.85
10 to 14 years	117,763	6	5.09	58,815	3	5.10	58,948	3	5.09
15 to 19 years	115,166	6	5.21	55,846	3	5.37	59,320	3	5.06
20 to 24 years	95,004	1	1.05	43,601	0	.....	51,403	1	1.95
24 to 34 years	121,227	5	4.12	55,422	1	1.80	65,805	4	6.08
35 and over	223,711	8	3.58	110,677	7	6.32	113,034	1	0.88
Age unknown	938	0	.....	455	0	.....	483	0	.....
TOTAL	918,647	124	13.50	446,500	58	12.99	472,147	66	13.98

JAN.-SEPT. 1935—POLIOMYELITIS CASES AMONG INDIAN RACE—SEX DISTRIBUTION—RATE

Indian Total Cases..... 14
Indian Total Pop. 16,681
Rate per 100,000 pop. 84

Indian Male Cases 5
Indian Male pop. 8,438
Indian Female Cases 9
Indian Female pop. 8,243

(Cases having onset Jan.-Sept. inclusive reported through 10-15-35)

sickness. As it is, unless lumbar puncture is performed (which is not a simple procedure for many men in general practice) the non-paralytic cases are not reported and not isolated. Consequently very indefinite knowledge as to the incidence of the disease in any epidemic is obtained from the number of reported cases. In the North Carolina epidemic the majority of doctors did not lumbar puncture their patients. Again many physicians who have practiced a life-time had never seen a case before—hence slight muscle or muscle-group weakness was not so easily discerned. Several paralyzed children were reported one, two and three months after the onset, when a slight limp, for instance, which persisted gave the true diagnosis. There were probably a good many mild cases among the more ignorant class of white people and negroes which were never seen by a physician. Hence the mortality rate of 9% based on 622 cases reported was distinctly higher than it should have been.

The following charts compiled by the North Carolina Board of Health shows the age, incidence, sex, and race of those afflicted in the epidemic.

Comments on Chart I:

Of the 622 cases reported, 8% occurred in children under one year of age. This was unusually high—because poliomyelitis is rare under a year of age.

In this age group were 31 females and 19 males. It is interesting that there is such a high percentage of females.

The total percentage of cases under 5 years is over 50% and under 10 years 78%, which run true to form in epidemics reported elsewhere.

Comments on Chart II:

The attack rate was 19.62 per 100,000 for the State at large. In Wake County it was 58 per 100,000 and in Johnson County, the most heavily infected area the rate was over 80 per 100,000.

Comments on Chart III:

It will be noted that the attack rate among whites was 21.48 per 100,000.

Comments on Chart IV:

The attack rate among the negroes was 13.50 per 100,000, considerably lower than for the white population. Similar observations have been made in other epidemics so that it is apparent that the Negro race is much less susceptible to polio than is the Caucasian. On the other hand the attack rate among Indians was very high—84 per 100,000 for the State at large and 112 per 100,000 for Robeson County.

The Croatan Indians live almost entirely in Robeson County. They do not have a colony, but are scattered over this section. Their socio-economic condition is much higher than the Negroes. They have their own schools and churches and wield considerable influence in the county. Many of them are independent farmers and own their own homes and farms, and as a race are industrious.

The attack rate was 40.59 per 100,000 for the county at large and 112 per 100,000 for the Indians. There were 14 cases in a population of 12,400 Indians.

Indians are peculiarly susceptible to pulmonary diseases, especially tuberculosis and it seems clear that they are also peculiarly susceptible to poliomyelitis.

Conforming to most of the reported epidemics, the North Carolina outbreak was more largely rural than urban—the proportion being 65% rural to 35% urban.

A follow-up inquiry was made to ascertain as far as possible the types of poliomyelitis which occurred. 181 of the 622 cases were heard from, and of these 142 were spinal, 14 bulbar, 6 bulbo-spinal, and 19 non-paralytic. Of the spinal cases there was 1 death, of the bulbar type 9 died, and of the bulbo-spinal 2 died. It was the general impression among those physicians who were familiar with poliomyelitis that the epidemic was unusually mild in the degree of paralysis which resulted—and while it is too early to predict with any degree of accuracy—it is probable that over 50% of those paralyzed will completely recover. This prediction is made after conferring with the orthopedic surgeons who are caring for the cases through their convalescences.

It has been suggested that climatic conditions in any specifically infected area might have a bearing upon the morbidity of the disease. The temperature and relative humidity and precipitation recorded in Raleigh, Wake County, during May, June, July and August this year showed little variation from the monthly mean taken for these months over a period of 40 years.

TREATMENT

Less than 10% of those afflicted received hospital care—the patients having been quarantined in the home by the respective County Health Officers and attended by the family physician. Hospital facilities were not generally available except in emergency cases—the towns in the State being small and the hospitals, with the exception of Duke University in Durham County, proportionately so. A larger number of cases were among the farmers where the families are large and where outside help is not often resorted to. It is reasonable to suppose that the quarantine was poorly observed and it is interesting to note that among these families isolated in the country and presumably without contact immunity, there were so few contact cases.

Through a questionnaire mailed to the various County Health Officers and some selected physicians in the area chiefly involved in the epidemic only 12 contact cases could be collected. One had an incubation period of 4 days; two, 5 days; two, 7 days; two, 10 days; and one, 15 days. There were two children in the same home who developed the disease one day apart and two in another who became ill two days apart.

Funds either from the Government, State, or Counties were not available to combat the epidemic or for any follow-up work, which would have been so desirable—particularly in the early stage of the disease.

The policy of the State Board of Health was one of open frankness. It had published daily in the press the number of new cases, the patients' names and addresses, the deaths, if any, and advised continuously such measures as the avoidance of crowds, social parties, going into stores or to moving pictures, or Sunday School, against swimming in public pools, against camping, etc. Realizing that the phyisicians in the State who would have these cases under their care were generally unfamiliar with the imperative necessity for early orthopedic treatment, the Board of Health mailed to all physicians in the State literature bearing on this subject. This contained a brief description also of simple forms of orthopedic apparatus recommended.

The quarantine period was established for a period of three weeks. Drs. J. P. Leake, A. G. Gilliam, and R. H. Onstatt of the United States Public Health Service, Dr. W. Lloyd Aycock of the Harvard Poliomyelitis Commission, and Dr. LeRoy W. Hubbard of the Warm Springs Foundation cooperated with the North Carolina Board of Health in the epidemic.

Dr. A. G. Gilliam administered the Parke-Brodie vaccine as a prophylactic agent to 300 children in Greensboro, Guilford County, and Dr. R. H. Onstatt also of the Public Health Service vaccinated 93 in Wilmington, N. C., New Hanover County. Alternate selected cases were used. Since neither Guilford nor New Hanover Counties were invaded to any extent these experiments have as their only value the observations upon the antibody content of the bloods taken before and three weeks after the injections of the vaccines. These results will be published at a later date.

A number of local abscesses ocurcred at the site of the subcutaneous injections. Dr. C. C. Hudson, City Health Officer of Greensboro who cooperated with Dr. Gilliam, writes that 6% of the 300 children receiving the vaccine developed abscesses at the site of the intradermal innoculation. About 12% developed rather large nodules where the intradermal injection was made and the same number had medium sized hard indurations. A few had constitutional reactions after being vaccinated. Both systemic and local reactions were worse after the second dose. Of the 93 vaccinations in New Hanover County only one child had an abscess at the point of subcutaneous injection.

It might not be amiss to brifly discuss vaccine preventive therapy for poliomyelitis, a subject of vital interest at this moment.

Since 1910 when Flexnor and Lewis[1] immunized monkeys with the killed virus of the disease, investigators have been working upon the problem of vaccine immunization.

Brodie[2] in January 1935 and Kolmer in February 1935 first applied prophylactic therapy to the human being. Brodie's vaccine is a 10% virus

suspension from the spinal cord of an Indian monkey inactivated with 0.1% formaline. Kolmer's[3] product is a 4% suspension of spinal cords of monkeys who have developed the disease, in a 1% solution of sodium ricineolate. Both of these investigators reported an increase of antiviral substance after administering their vaccines.

At a round table discussion on poliomyelitis reported in the August 1935 issue of the *Journal of Pediatrics* the following were some of the questions raised, by Toomey[4] and others.

Is the amount of neutralizing antibodies produced by either of them sufficient to protect the child against disease—the infective dose of which is not known?

Are these vaccines made from the spinal cords of monkeys specific for the human being?

Are vaccines really attenuated?

May not attenuated virus become more active after having been injected into the human body?

At the October meeting of the American Public Health Association held in Milwaukee—Dr. T. M. Rivers of the Rockefeller Institute reported 8 cases of poliomyelitis which had occurred in individuals after the first and second doses of Kolmer's vaccine.

In the December 28th number of the *Journal of A. M. A.* Dr. J. P. Leake[5], Medical Director of U. S. Public Health Service reported 12 cases of paralytic poliomyelitis with high fatality following the subcutaneous and intracutaneous injections of poliomyelitis vaccines. Paralytic poliomyelitis was not epidemic in any of the localities at the time of occurrence of these cases.

Dr. Leake says, "The likelihood of the whole series of cases having occurred through natural causes is extremely small."

"It is believed that this series of cases followed by intervals of 6 to 14 days the injection of one or the other of the two vaccines renders undesirable the further use of poliomyelitis virus for human vaccination at present." In every case in which the sequence is known the level of the spinal cord first affected corresponded to the extremity in which the injection was made. There were 6 deaths, a mortality of 50%, and the other cases were more or less extensively paralyzed.

Another element of danger which must not be totally disregarded in giving any vaccine which is made from nerve tissue is the fact that it may cause encephalomyelitis. About one in every 3000 cases who have been given antirabic vaccines develop paralysis.

Much has been written about the use of convalescent serum, pooled blood or parental blood transfusions both for preventive and curative purposes. Theoretically they should have some prophylactic value as over 90% of adults have an immunity. Practically it seems doubtful if they help to any great extent.

Stokes (et al)[6] felt that they obtained favorable results from their use, while Kessel (et al)[7] considered them valueless and Schultz and Gebhardt[8] concluded that they were of limited worth.

Almost every one agrees that after the first symptom is evident, that is, when the virus has invaded the neurons, neither convalescent serum, pooled blood or blood transfusions will have any effect upon the extent of the paralyses suffered. The experimental evidence offered by Schultz and Gebhardt[9] point strongly to this. Langdon[10], Wesselhoeft[11], Henry and Johnson[12] saw no benefit resulting from their use.

The quantity of convalescent serum, pooled blood or blood transfusions given in the North Carolina epidemic was so small as to be negligible.

At the present time it may be said that the only definite means of combatting poliomyelitis so far as we know lies in adequate quarantine of the patient, a comparative isolation of children in an infected area, the treatment of the acute symptoms, adequate rest in bed and in early and late orthopedic care.

I am indebted to Dr. Carl V. Reynolds, Sect. and to Dr. Joseph C. Know, Epidemiologist of the North Carolina Board of Health for the statistical data and charts bearing on the North Carolina epidemic of poliomyelitis.

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CHAIRMAN: We have heard a most complete resumé of a most interesting subject and one of the most timely, and it will be well worth our while to hear from our most distinguished guests from South Carolina again.

DR. JAMES A. HAYNE, State Health Officer of South Carolina: It is a pleasure and a benefit to be with you. I know most of you personally and have for a good many years. I have had the pleasure of meeting you here, there and elsewhere. These papers that have been presented are certainly worth hearing and have some valuable information. There is no question but that you had quite an extensive epidemic in North Carolina last year, and while it was a very terrifying experience to those who lived here, it certainly did good in educating the Southern physician as to what poliomyelitis can do. Most of the epidemics have been

in New York, New England and California. When we hear ten thousand people are starving to death in China, it doesn't bother us, but when it happens next door, we get excited.

Well, lots of people say there was not much of an epidemic last year in North Carolina; but there was. There are several peculiar ideas, things said and thought about this most unusual disease. People will tell you it is a new disease, which it isn't. It is an old disease. And some people have the idea that everybody is paralyzed, which is not true. I think we have learned a great deal about polio the last few years. Some of the most valuable things we have learned are that things we have heretofore believed were all wrong. We used to think the disease attacked only infants, but we now know it is not limited to infants. We know extremely little about why some one gets the disease or doesn't get it.

Last year everybody got excited and thought we ought to do something to protect other children. . . .

There can hardly be any question but that it is very dangerous to use Connor's vaccine. . . .

I don't believe we can go against Leak's evidence.

I rather advise my patients, "Don't run to it and don't run from it." Nobody knows why they get it and why they don't get it. Nobody knows, if they get it, if they are going to get over it. But most people, the vast majority of people, escape it regardless of age, and a great number of people, at least more than half, who do develop the disease, are not paralyzed, and if you are unfortunate enough to be paralyzed, the chances are within a year that you will recover. I can't be pessimistic as so many people are, about the disease, I can't get excited, and I can't countenance the statement that the medical profession does not know anything about poliomyelitis. What we have learned in ten or twenty years is tremendous and encouraging.

Chairman: I hope this most interesting paper will be fully discussed. We have some distinguished visitors from South Carolina. Dr. Richardson, from Brooklyn, N. Y., and Black Mountain, is here.

Dr. Richardson: I was out of the area. I was in the area of pseudo epidemic. All we got—we didn't have any of the fun or excitement of treating. All we had was the fun of losing money. Some of us felt they were rather extreme about it and were inclined to deny the fact that there was an epidemic. We got over that before the thing was over. The economic loss was the thing that appealed to us here. The camps suffered terribly in this epidemic. You might be interested to know how it affected us. The summer camps were just about opening when the first news came that the thing had become a real epidemic. A rather amusing sidelight was the fact that camps which were already opened were all right, economically speaking, because people who had sent children were very glad to leave them. Those who on the other hand began to hear about the epidemic, and of course a great many didn't at first, hesitated to send children away from

home, and as soon as the news was confirmed and those camps opened, they were terribly hit; many of them half or two-thirds of their registration. We had a rather funny reaction here. A patient of mine came in—her children were well but they were in my care—she came in and said, "Doctor, I feel I must get out of North Carolina with the children." I said, "Why?" She replied, "You know, they tell us that North Carolina is having a terrible epidemic." I said, "Where are you going?" "To Roanoke, Virginia." I had just heard that in Roanoke they were having more cases than anywhere except in the heart of the epidemic. She finally left for Roanoke, Virginia, to get out of the infection in North Carolina.

I used to see Dr. Howard Sumner every week to see how we were coming. We did have a number of cases; seventeen in Buncombe and adjoining counties. That was not the general information. All that most of us heard was 7 or 8 or 9 cases. My first hand information was more the reaction that it had outside the State. A good many of us were inclined to be stampeded by the fact that the vaccine contained living organism. I don't think it was given in many instances in the Western part of the State. What was given was at the insistence of the parents. The doctors were against it.

Paper No. 5 has been changed from Pneumonia to Poliomyelitis. Couldn't we have that paper and then have discussion on both?

CHAIRMAN: If that meets with the approval of the Society we will be glad to do that. Are there any contrary indications? If not, we will have Dr. London present that paper. Will the Committee that served with Dr. Sidbury repair at this time to bring in their nominations?

DR. LONDON: Dr. Roberts was sorry he couldn't be here, but he sent this paper and asked me to read it for him. This is the report of a case Dr. Roberts is now treating in Durham, or had experience in treating at the Watts Hospital.

CHAIRMAN: The Moore County Medical Society offers a prize for the best paper in the entire session, and may I appoint this committee before Dr. London begins his paper. On that committee I will appoint Dr. Ward, Dr. Kutscher and Dr. Henderson.

ON THE POLIOMYELITIS EPIDEMIC IN THE DURHAM NORTH CAROLINA AREA

B. W. ROBERTS, M.D.

After such a fine paper by Dr. Root, I trust I shall not surfeit the audience with too much poliomyelitis.

It perhaps would be interesting to go into the details of cases it has been our privilege to study. In reviewing the literature, with the most tremendous mass of work having been done, one is struck with the paucity of positive conclusions; so many questions are surrounded with conjecture and the usual paper ends with the notation, "More work should be done

along this line." Indeed, until the virsuses are better understood, much research will necessarily lead up blind alleys and to contradictory reports. A large literature has accumulated with regard to the more easily ascertained facts, such as seasonal nature, morbidity, epidemiology, history, and hundreds of other data. Some fundamental questions are still in the air, such as the route of attack, transmission, immunity, resistance, and virility of the virus, the difference between monkey virus and human virus, and the relationship of immunity to blood groups, the answers to all these and numerous other questions being in the hazy background. Probably the greatest question of the moment is the value and reliability of the Kolmer and Parke types of vaccination. This will be taken up later.

We in Durham had the advantage of seeing the epidemic approach us. Our first case corresponded with the newspaper report of the 250th case in the state. Upon seeing the epidemic approach, through conferences and consultations of war, we decided on methods of handling the epidemic. In the first place, one ward of the hospital was set aside for poliomyelitis cases only and during the entire epidemic, this ward was used exclusively for poliomyelitis cases. We set up a spinal puncture station convenient to the polio ward and laboratory, where we did lumbar punctures on any and all comers. This station was invaluable in the early diagnosis of cases. Equally valuable it was in clearing the diagnosis in suspected cases. We probably turned away as many with negative spinal fluid findings as we admitted with the diagnosis of polio. With one exception, none of these cases later came down with the disease. In some especially suspicious cases, the child was brought back to us two or three times for further lumbar puncture studies. The one exception was a child who was punctured twenty-four hours after onset of the disease. Although the cells are supposed to show up in the fluid within twelve hours, this spinal fluid was normal as to pressure and cell count. After changing doctors three times, this child returned to the hospital with paralysis of both legs. I think there is a lesson to be learned here; that spinal puncture, when done within a few hours after onset and found negative, should be repeated if the symptoms of polio continue. After conference, we discontinued the use of Kolmer vaccine, which was available, as being too untried and perhaps too dangerous. This stand may still be defended in the light of J. P. Leak's report of twelve cases of paralysis reported to the United States Public Health Service. Leak's series of cases showed a very fatal type of paralysis occurring invariably between six and fourteen days after vaccination, attacking first the spinal cord level applicable to the area of the body vaccinated. Very frequently the paralysis attacked the limb on which vaccination was practised. In passing, this might lend further proof that the passage of virus is normally by nerve tissue and not by blood or lymph channels. We know under special artificial conditions it may follow other routes.

I would not like to be understood, however, as thoroughly condemning the Parke and Kolmer vaccines. Personal likes and dislikes in this instance

are of course of no moment. Their work apparently shows possibilities of future benefit, and it is possibly along this line that we will eventually control this disease.

As to further prophylactic measures, we isolated children by groups of houses. We took three houses in a block with children, and limited play to children in these houses among themselves. The next three houses formed their own play group, and on ad infinitum. Birthday and other parties were stopped by common hysteria. Picture shows were closed to children and the opening of grammar schools was postponed one month as at the time of scheduled opening, the epidemic did not seem to be declining. With all, our efforts were perhaps negligible. Durham had a relatively high morbidity compared to other cities in the state. Of interest to note is that with little attention paid to the negro population, there were no negro children involved in Durham, yet in the state, I am informed by Public Health officials, there was roughly one-third as many negro cases as white, and this roughly compares with the population figures of both races. However, it should be mentioned in this connection that the negro section of our city is in the southern part of the city. Our first case and all our early cases were along the northern border of town and only the cases in the late summer occurred in the districts near the negro section. The idea that polio occurs first near a water course and follows either lanes of transportation or a water system, was borne out by the fact that fully half our cases occurred along the length of one main thoroughfare. The first case in town was near a water reservoir and a main pipe system runs under this boulevard. Both of these suggested lines of thought could be verified.

Another prophylactic measure we used was the injection of blood in the buttocks from two normal donors or whole blood from a polio convalescent, also McKahnn's Placement extract was used in some cases. In none of the cases thus treated did we find paralysis. The number was relatively large, yet relatively too small for scientific deduction. We refused to use alum sprays in the nose, although the evidence is good that this is a satisfactory preventive. Alum sprays daily for three or four months is not preferable to paralysis. It has been suggested that alum sprays may reduce the normal anti-virus principles found in the normal mucosa and nasal washings of a large percentage of people.

The point of most interest in this paper is the therapy. There should be a great many more such treatments before we dare advocate even such an innocuous procedure or before any true scientific deductions can be made as to its efficacy. We cannot find references where this exact type of treatment has heretofore been used, although many moderately similar procedures have been tried, such as giving horse serum, polio convalescent serum, and normal human serum. This has been given intraspinally, intravenously, and intramuscularly, but apparently in no case has it been given in large volumes, 50 to 100 c.c. being the average maximum dose.

It has occurred to us that the withdrawal of spinal fluid, lessening the spinal pressure, followed with massive transfusions, increasing the blood pressure, may mechanically throw serum into the spinal passages. Whether this mechanical principle is active here, or the transmission can be accomplished only by osmosis, is a question I cannot answer. Even though the capillary action will soon smooth out this elevated blood pressure, possibly mass action by increased volume could also throw serum into the spinal passages.

We used early, massive, frequent transfusions, giving three or four transfusions within the course of thirty-six hours. Few cases received four transfusions and these were cases that clinically were obviously more seriously involved. In the case of M. C., the fever was much slower reaching normal than in the average case. The boy was tender and stiff from the back of his neck to his heels, yet he never showed any sign of paralysis, and recent check-up shows no muscle atrophy or paralysis.

The blood given was citrated whole blood. We gave the estimated and calculated maximum dose each time. The typical case was brought to the spinal puncture station, spinal tap was done, fluid examined, donor matched, and transfusion given very quickly after diagnosis. By giving blood from three donors with the known fact that seventy or more per cent of normal adults are immune to polio, we felt that from these three, we would find two with the antivirus principle. For a great many of the cases we were able to get polio convalescents to donate blood for one transfusion. However, it is realized that blood from a known polio apparently has a higher and more effective titer than the blood from a polio convalescent, unless taken very shortly after the disease occurs.

In a total of thirty cases in the city where early diagnosis was made, we had only one case of paralysis developing after admission to the hospital, and this case might well be noted; that of a diabetic patient sick for ten days and sent to the hospital for her diabetic condition. This case did not get treatment as early in the disease as did our other cases. She developed a very slight paralysis in the left gluteal group of muscles.

STATISTICS

Total cases studied	44
From Durham County	32
Out of Durham County	12
Of the Durham County cases	32
Admitted without paralysis	29
Admitted with paralysis	3
Developing paralysis after admission	1
Deaths	0
Total paralyzed	4
Percentage paralyzed	12.5%
Average days sick before admission	2.5
Average days sick before admission—paralyzed cases	7
Average days sick before admission—non-paralyzed cases	2.5

Of the out of county cases	12
Admitted without paralysis	5
Admitted with paralysis	7
Developing paralysis after admission	1
Deaths (within 12 hours)	1
Total paralyzed	8
Percentage paralyzed	66.6%
Average days sick before admission	4
Average days sick before admission—paralyzed cases	5.9
Average days sick before admission—non-paralyzed cases	2.4

Progression of paralysis after admission:

Paralysis increased	1
Deaths	1
Bulba type	4
Average days sick before admission—paralyzed	5.4
Shick test previously done and recorded on	11
Negative	10
Positive	1

Cell counts on paralyzed cases: 12, 12, 18, 22, 47, 60, 66, 67, 90, 100, 130, 200.

W. B. C. 5,000 to 17,000

Blood Types (Moss):	I	0
	II	16
	III	8
	IV	20

Spinal Fluid: Cell count 12 to 17,000.

Colloidal gold done on	41
Slight reaction zone II	15
Slight reaction zone I	3
Negative	23

Globulin:

Slight increase in	11
Decided increase in	2
Negative	31

Of the entire group:

Admissions	44
Paralyzed	12
Per cent paralyzed	27.2%
Deaths	1
Mortality	2.2%

Occurring as follows:

June	7
July	16
August	9
September	6
October	3

DURHAM COUNTY CASES

Name	Age	Sex	Urban or Rural	Contact	Days ill before admission	Symptoms and Signs on Admission: Headache	Vomiting	Fever	Constipation	Stiff neck	Stiff back	Pain	Tenderness	Muscle weakness	Paralysis	Spinal Fluid: Pressure	Cells	Pandy	Sugar	Colloidal Gold	White Blood Count	Blood Type (Moss)	Transfusions (Number)	Total Amount Blood	Days in Hospital	
JD	10	M	U	No	2	√	0	√	√	√	√	0	0	0	0	+	224	V.S	77	II	9.4	II	3	1,000	9	Recovered
DD	8	F	U	Yes	1	√	0	√	√	√	√	Abd.	0	0	0	+	270	V.S	62	II	7.4	III	3	1,000	8	”
DN	10	M	U	No	2	√	√	√	√	√	√	Legs	0	0	0	+	66	0	—	—	—	II	3	950	5	”
PH	10	F	U	No	2	√	√	√	√	√	√	0	0	0	0	+	160	0	57	0	7.3	II	3	800	8	”
TW	7	M	U	No	1	√	√	√	√	√	√	0	0	0	0	+	21	0	69	0	—	IV	3	825	9	”
JM	8	M	U	No	3	√	√	√	√	√	√	0	Legs	0	0	+	95	0	55	II	10.6	IV	3	1,000	6	”
AL	5	M	U	No	7	√	√	√	√	√	√	0	0	0	0	+	33	0	—	—	5.9	II	3	750	5	”
JR	5	M	R	No	6	√	√	√	√	√	√	Neck	Neck	0	0	+	153	0	71	II	6.1	IV	3	850	7	”
EB	6	F	R	No	2	√	√	√	0	√	0	0	0	0	0	+	175	0	822	0	9.4	III	3	900	7	”
EP	9	F	U	?	2	√	√	√	√	√	√	Arms Legs	0	0	0	+	680	V.S	63	0	—	II	3	900	7	”
HH	9	M	U	No	2	√	√	√	√	√	√	Gen'l	0	0	0	+	170	0	91	0	10.0	II	3	950	6	”
PW	4	F	U	No	1	0	0	√	√	√	√	Gen'l	Gen'l ++	0	0	+	41	0	61	1	17.0	IV	3	700	9	”
JG	3	M	U	No	2	0	0	√	√	√	√	Wrist	0	0	0	+	114	0	75	0	6.4	II	3	550	9	”
EO	7	F	R	No	2	√	√	√	√	√	√	Abd.	0	0	0	+	210	0	66	1	5.2	IV	3	1,000	7	”
WL	14	M	U	No	2	√	√	√	√	√	√	0	0	0	0	+	12	++	80	1	5.0	IV	3	915	9	”
LW	11	F	R	No	2	√	√	√	√	√	√	0	0	Neck Back	Neck Back	+	200	V.S	66	II	8.7	I	3	1,200	15	Paralysis both arms and legs
LB	9	M	U	Yes	8	√	√	√	√	√	√	Legs	Legs	0	0	+	21	0	58	II	6.9	IV	3	750	14	Recovered
LM	8	F	U	No	3	√	√	√	√	0	√	0	0	0	0	+	260	0	71	II	9.4	IV	3	640	14	”
HR	10	F	U	No	4	√	√	√	√	0	0	0	0	0	0	+	320	0	59	II	7.4	II	3	1,100	8	”
CS	2	M	R	No	4	0	√	√	√	√	√	Body Legs	Body Legs	Neck Legs	Neck Legs Arms	+	66	0	142	II	12.0	IV	2	500	20	Paralysis—legs
CF	3	M	U	No	15	√	√	√	√	0	0	Both Legs	Both Legs	Both Legs	Both Legs	+	12	Inc.	714	0	5.1	II	1	200	25	”
MC	7	M	U	No	3	√	√	0	√	√	√	Back	0	0	0	+	240	V.S	77	0	5.95	III	4	1,000	21	Recovered
BT	3	M	U	No	1	0	0	√	√	√	√	Neck Leg	Leg	0	0	+	35	SI.	71	0	8.5	III	3	700	8	”
LG	13	M	U	No	1	√	√	√	√	√	√	Abd.	0	0	0	+	200	0	178	II	5.5	IV	3	775	7	”
JS	12	M	U	No	3	0	√	√	√	√	0	0	0	0	0	+	215	SI.	65.8	0	7.0	IV	3	450	7	”
BW	13	M	U	No	2	√	√	√	√	√	√	Legs	Legs	0	0	+	70	0	70	—	6.35	IV	3	1,100	21	”
LC	9	M	R	No	3	√	√	√	√	√	√	0	0	0	0	+	240	0	90.9	II	5.5	III	3	900	7	”
JC	5	F	R	No	3	√	√	√	√	√	√	0	0	0	0	+	56	0	63	0	9.9	IV	3	600	6	”
LS	6	F	R	No	1	√	√	√	√	√	√	0	0	0	0	+	1,700	Inc.	54	0	17.0	IV	3	775	5	”
MB	9	F	U	No	1	√	√	√	√	√	√	0	0	0	0	+	240	SI.	83.3	0	7.7	IV	3	775	6	”
AB	6	F	U	No	1	√	√	√	√	√	√	0	0	0	0	+	144	++	71.5	0	10.35	II	3	725	6	”
IM	5	F	U	No	3	√	√	√	√	√	√	0	0	0	0	+	102	Inc.	11.1	0	8.0	II	3	575	8	Paralysis—right gluteal

CASES OUT OF DURHAM COUNTY

Name	Age	Sex	Urban or Rural	Contact	Days ill before admission	Symptoms and Signs on Admission: Headache	Vomiting	Fever	Constipation	Stiff neck	Stiff back	Pain	Tenderness	Muscle weakness	Paralysis	Spinal Fluid: Pressure	Cells	Pandy	Sugar	Colloidal Gold	White Blood Count	Blood Type (Moss)	Transfusions (Number)	Total Amount Blood	Days in Hospital	
BF	5	M	..	No	7	√	√	√	√	√	√	Back Neck	√	Yes	Bulbar Arm	Inc	100	0	100	II	—	III	3	700	17	Paralysis
MK	8	F	..	No	4	√	√	√	√	√	√	Abd.	Legs	Inc	0	Inc	50	V.S	66.6	0	—	III	1	300	10	Recovered
JH	3	M	..	No	7	√	√	√	√	√	√	Legs	Legs	Yes	Legs	Inc	12	0	75	II	4.9	II	2	550	12	Paralysis—both legs
GB	4	M	..	No	7	0	0	√	√	0	0	Legs	Legs	Legs	Legs	Inc	130	0	55.5	0	10.4	II	3	600	15	” left leg
RM	9	M	..	No	2	√	√	√	√	√	√	0	0	0	0	Inc	14	0	66	0	4.8	II	3	700	9	Recovered
GH	3	F	..	No	3	√	√	√	√	√	√	Arms Legs	Arms Legs	Arms Legs	Legs	Inc	90	0	58	0	8.85	IV	3	550	15	Paralysis—legs
TW	8	M	..	No	2	√	√	√	√	√	√	Legs	0	0	0	Inc	22	0	100	0	6.8	II	3	700	13	” rt. leg
BC	10	M	..	Yes	10	√	√	√	√	√	√	Arms Legs	Arms Legs	Leg Arm	Bulbar Arms Legs	Inc	47	0	64.1	II	5.9	II	2	550	24	”arms & legs
RC	6	M	..	No	3	√	√	√	√	√	√	Abd.	0	0	0	Inc	18	0	69	0	5.75	IV	3	725	7	Recovered
EH	2	M	..	No	4	0	√	√	√	0	0	Gen'l	Gen'l	Gen'l	Bulbar	Inc	60	0	100	0	17.4	III	1	250	1	Death—respiratory paralysis
IJ	10	M	..	No	3	√	0	√	√	√	√	Legs	Legs	Legs	Legs Arms	Inc	67	0	60.5	II	12.5	IV	3	1,150	18	Paralysis—arms and leg
MJ	6	F	..	Yes	1	√	√	√	√	√	√	0	0	0	0	Inc	42	0	60.6	0	8.9	IV	3	850	8	Recovered

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CHAIRMAN: I certainly don't think it would be out of order if we had a few words from Dr. Lessesne Smith.

DR. SMITH: I am recognized as being rather rabid. I wonder what we will think in ten years' time, after studying the disease more thoroughly—whether we will think we are right or wrong in our present theories. I am of the opinion that we will think we are sort of cross-wise in what we are thinking today. However, he said he couldn't get excited. I can't see any reason why we got excited last year; that is, in our part of the country. We had none in this particular part of North Carolina, yet we got the reputation and suffered the consequences of having a terrible epidemic up here. The people in Spartanburg across the line from North Carolina would not take a drink of Coca-Cola in Tryon because they were afraid of poliomyelitis. That is the extent of the propaganda that was handed out. I am sorry I didn't hear all these papers, but Dr. Root at the Southern Medical showed that there were 19, I think, per hundred thousand, wasn't it, for the State at large, which is not an epidemic. I should say that that 19 to 100,000 would not be epidemic. The ridiculous part of the whole situation was this: the people in Florida would ship cars to Jacksonville on a boat and take them to New York, which had a much heavier concentration than North Carolina had, because they didn't want to pass through North Carolina. Fifty cases, I believe, per 100,000 was the average in New York during the epidemic. North Carolina at the highest had 19, or 17, possibly, and gradually shaded off. I was in hopes that the North Carolina Medical Association would have a meeting without discussing the subject, because the more we discuss it the more popular it becomes; the more the phobia becomes increased in the people's minds. It wasn't anybody else's fault—I lay the whole trouble to the egotism of

the State Board of Health; that is, that they wanted to make out that they were doing a whole lot of stuff, and, I say it without any rancor, they wanted to advertise themselves, and they thought that was a good way to advertise themselves, by putting it in the paper. In South Carolina they started the same kind of stuff. I happened to be a member of the State Board of Health of South Carolina and I wrote to them and told them to keep that stuff out of the papers; didn't want to have anything like that in the paper. That was the last of it. We didn't have any epidemic in South Carolina. I am talking about deaths. The deaths in North Carolina were 40, weren't they? I think 40 deaths.

VOICE: Sixty-seven.

DR. SMITH: That was a later date.

DR. REYNOLDS: Ten per cent death rate; 675 cases.

DR. SMITH: I understood 40. South Carolina had 13 deaths. Compare the South Carolina deaths, 13, with North Carolina's population would give you just as much death rate in South Carolina. Thirteen deaths in South Carolina. Three times the population in North Carolina as in South Carolina. Three times 13 makes 39. Therefore, there was as high a death rate in South Carolina as in North Carolina. Of course, we in South Carolina didn't have the scientific processes or knowledge, I might call it, that you had in North Carolina, and we made our diagnosis entirely on the spinal puncture; result of the spinal puncture, as Dr. London showed in his paper. The only way we had up to two years ago of making diagnosis of poliomyelitis was by the resulting paralysis. Today we are able to make diagnosis by spinal puncture. To show the extent of the phobia among the laity as well as the physicians, only last Saturday afternoon. . . . was referred to me as a case of poliomyelitis; a case of phobia created by the newspapers advertising of polio in North Carolina last year. I admit that it is good to educate the people, but I think we ought to educate them in the proper manner. I don't think we ought to scare them to death.

It is a pleasure for me to meet with the Section on Pediatrics.

CHAIRMAN: Our time is drawing rather short, but I don't see how the Society could close this discussion without hearing from a distinguished guest. I see Dr. Reynolds is with us, and I know the Society would like to hear from him. Dr. Reynolds, Chairman of the State Board of Health of North Carolina.

DR. RENOLDS: You have put me on the spot; because I am one of those blankety blank fools that speak from the mouth out.

What is an epidemic? It depends on the disease, Dr. Smith, and the rarity of that disease. The average number of cases of poliomyelitis in North Carolina is about 71 cases per year. In this instance we had 675 cases in North Carolina, scattered from the west section to the east. We had 39 cases in North Carolina up to May 1st, and of the 39 cases there

were 11 deaths. Where were the others? There are three stages of poliomyelitis—three types of poliomyelitis. One is that you have just symptoms of any acute infectious disease; then there are mental symptoms, and third, paralysis. About 90 per cent of the cases in North Carolina were paralyzed. We have the names and addresses; and when people from South Carolina, Canada, Washington, wrote in and asked the status of the situation in North Carolina, being custodian of the health of the people of North Carolina, they got the truth; let it fall where it will. We did not submerge the truth on account of mercenary reasons or the popularity of any community. North Carolina—Buncombe County—my own home town—God knows I love it and would sever my right arm rather than do injustice to it—reported, I think the last number was 18. People would write in and say whether or not they should come to Western North Carolina and we would tell them Western North Carolina was free from poliomyelitis with the exception of Buncombe County; and that was the truth, and we told them so, and I think any man, I don't care who he is or where he comes from, who would submerge or attempt to submerge or quiet down anything that is as dangerous to mankind as poliomyelitis, there is something wrong with him—there is something wrong with him. We are custodians of the health of the people. It is our duty; our sworn duty. I couldn't go to sleep at night if I failed to give that knowledge to the people. I daresay not a man in this audience, if he knew there was a case of poliomyelitis, or 675 cases, would want to send his child into the affected area. It may be all right to send the other man's child, but it is not right to send mine, and I am not going to do it. I am not going to do it, and I don't believe you would do it. I think honestly and sincerely that we should forget the doctor, when it comes to a question of life. And I pause when I say it and I mean every word of it. I think this: I think North Carolina has the reputation today throughout the United States that when they write to the State Board of Health of North Carolina they are going to get the truth and they can depend on it, and they will not go into any town or any part of the State with fear because they do not know the facts; and so, as long as I am Health Officer, they are going to get the truth.

Chairman: Members of this session, since we have had a pretty complete discussion, I would just ask, rather than have any further discussion, that Dr. Root will conclude, and then Dr. London.

Dr. Root: I haven't anything to say except this: I feel that without the frankness and openness of the policy of the State Board of Health that there would have been far more poliomyelitis in the State than otherwise. Of course, everybody knows that when you get in an infected area, a definite percentage of individuals in that area carry that virus in their throats and can transmit it to others. Then the only way to prevent the spread of this disease is by letting the people know where the cases are and being frank and open about it, as the Board of Health has been. In the 1935 epidemic in California there were thousands and thousands of

dollars available for combatting the epidemic as soon as it started. In North Carolina we had not one cent, and so the burden of the fight lay on the State Board of Health. It was their duty to let the people know just where they stood. It did create hysteria, and excitement, but it saved a whole lot of sickness and probably a good many lives.

Dr. London: I have nothing further.

Chairman: Dr. McBryde, of Durham, will now come forward and give us his paper on "Fever Therapy in Children." Dr. McBryde.

FEVER THERAPY IN CHILDREN

By Angus McBryde, M.D.

Department of Pediatrics, Duke Hospital, Durham, N. C.

During recent years various methods of producing therapeutic fever have been used. The more commonly used ones are inoculation with malarial organisms, the use of intravenous typhoid-paratyphoid vaccines and mechanically induced fever by means of radiothermy, diathermy, the inductotherm, air conditioned cabinets and radiant energy. We have used radiant energy as it seems to us to have the advantages of absolutely accurate control of the temperature, constant production of temperature and simplicity. We have used a cabinet similar to the type used by Dr. Stafford L. Warren of the University of Rochester Medical School. The patient is placed in this cabinet with the head outside and his temperature is raised by means of the heat produced by carbon filament bulbs. The cabinet is made in three parts; the base fits over the mattress of the bed and rests on the springs. The middle section is hinged on the base, and the upper section contains seven 120-watt carbon filament lamps which are 18 inches from the body of the patient and are protected by a wire screen. A series of switches allows any number of lights to burn at a time. The temperature is taken by means of an electrical thermometer kept constantly in the rectum, but rectal temperatures taken at intervals of ten minutes with the usual thermometer are satisfactory.

The patient receives an enema and a liquid breakfast, and then is placed in the cabinet which previously has been warmed to 104°F. The body is covered with a light blanket to prevent burns and an ice-bag is placed on the head. The breeze from an electric fan blowing on the head makes the patient more comfortable. Liquids consisting of water, normal saline, broth milk and fruit juices are given to total two to five thousand cc. during the treatment.

Certain reactions occur during the course of therapeutic fever. Abdominal distension occurs in about one-half the treatments and may be accompanied by abdominal pain. Vomiting also occurs frequently, and infrequently it may be prolonged and severe, necessitating termination of the treatment. The giving of sodium chloride for 24 hours before the treatment as well as during the treatment (10-15 grams) decreases the ten-

dency to vomiting. The fluid intake varies from 2,000 to 5,000 cc. but the urinary output is only 100 to 200 cc. Patients maintain or gain weight during the treatment and there is little evidence of blood concentration. Convulsions have occurred in only one child, aged 3 years, but these ceased when the temperature was lowered. No deaths have occurred among the 32 children who have been given a total of 70 fever treatments at temperatures varying from 105°F. to 106.7°F., and for 5 to 16 hours duration. However, we feel that fever therapy is a dangerous procedure, to be given with the utmost care, and only after a painstaking examination of the patient.

Fever therapy at high controlled temperatures has been most effective in acute gonococcus infections. It has been used in gonococcus arthritis, urethritis arthritis, prostatitis and epididymitis, pelvic inflammatory disease, vaginitis and ophthalmitis. Carpenter and his associates have shown that all strains of gonococci are killed in vitro by exposure to a temperature of 106.7°F. for 7 to 20 hours. Strains vary considerably in their lethal death time at this temperature. We have made it a practice to treat the patient at that level for 8 to 12 hours. The treatment should be repeated within 3 days if cure is not effected. A second treatment at this level usually will result in complete cure. When gonococcal ophthalmia is present, the eyes are covered with a moist towel over which is placed an electric pad. Cures often result when the patient is heated for less than the lethal death time of the organism, indicating that factors other than the high temperature must play a part. We have treated 8 children with gonococcus infection usually at 106.7° for 8 hours. The ages ranged from 6 months to 14 years. Five of these patients had vaginitis. In four of these, after the second 8-hour treatment at 106.7°F., the discharge disappeared and smears were consistently negative. Three patients had ophthalmia and in these, even during the treatment, the chemosis and discharge decreased rendering local treatment much easier. Within 5 days smears were negative even in the most severe cases. Two children with gonococcal arthritis were treated; one was symptom free after one treatment, and has remained so for 18 months, the other was improved after one treatment and remained so for at least 6 weeks. This latter patient also had arthritis and epididymitis, which was improved, though we doubt if cure resulted from the one treatment. Prolonged high fever without doubt is specific for gonococcus infections. The patients must be chosen with care.

For many years it has been known that certain forms of syphilis, especially neurosyphilis, are improved by fever therapy. Malarial fever mainly has been used but it is being replaced by fever produced by mechanical means. The thermal death time of spirochetes has been studied by Boak, Carpenter and Warren, who found that in vitro heating of infective syphilitic extracts for one hour rendered them innocuous when injected into other rabbits. One fever at 106.8° to 107.5°F. for 6 hours was sufficient to destroy the spirochete and heal syphilitic lesions in rabbits. These results in addition to the known effect of fever on neurosyphilis

have made investigators more optimistic concerning the healing power of high fevers on various forms of congenital and acquired syphilis.

We have treated five children with congenital syphilis. One girl with Wassermann-fast syphilis continued to have a positive Wassermann after 10 fever hours at 105°F. A child whose spinal fluid showed a paretic colloidal mastic curve and positive Wassermann reaction received two treatments at 106.8°F. for 8 hours each, as well as intensive arsphenamine therapy. One month after the beginning of treatment the spinal fluid findings were normal. His dementia improved considerably as did his nutritional state. Three additional treatments resulted in continued improvement. Nine months later the blood Wassermann remained strongly positive. One negro boy with marked interstitial keratitis showed some improvement after 14 hours of fever therapy at 106.8°F. Another symptomless syphilitic negro boy, age 3 years, was treated at 104.8°F. for 7 hours and at 106.2°F. for 8 hours, without immediate change in the blood Wassermann. Fever therapy in congenital syphilis other than neurosyphilis deserves further trial, as little has been proved as yet.

Local or general fever therapy has long been used in chronic infectious arthritis. Though this is essentially a disease of adult life, the cases encountered in children are likely to be quite severe. We have treated 8 patients with chronic infectious arthritis. While the immediate result is an increase in mobility, accompanied by decreased joint pain and tenderness, the improvement is only temporary. Unless supported by baking, massage and active and passive motion, fever therapy is of little permanent value. The improvement probably is due to increased circulation to the joints. As a lethal effect on a specific organism is not desired, temperatures of 105°F. for 5 hours usually are sufficient. Several treatments appear to be of more value than a single treatment.

The movements of Sydenham's chorea can be considerably decreased by artificial fever therapy. First nirvanol and then typhoid-paratyphoid vaccine intravenously have been used to produce fever. More recently fever induced by physical means has been used. Definite improvement occurred in 6 of 8 children with severe chorea treated for period of 5 hours at 105°F. However, we are of the opinion that intravenous typhoid-paratyphoid vaccine is less dangerous, easier to give, and the results are as good or better. Fever treatment is of value in those cases in which the combined vaccine does not raise the fever to sufficiently high levels. One child 8 years of age who had acute encephalitis showed definite improvement mentally and physically after 16 fever hours at 106.3°F. A boy with Hodgkin's disease showed marked decrease in the size of the spleen after the first treatment, but after third treatment at 106°F. for 5 hours became jaundiced and this persisted until death occurred, 3 months later. One child with tuberculous meningitis, and one with undulant fever were unimproved by fever therapy. One patient, late in the course of lymphatic leukemia, received increasing doses of Fowler's solution and one treatment

at 106.2°F. for 12 hours. The temperature remained above 104°F., and the WBC dropped from 5,300 to 950 per cu. mm. at the time of death two days later.

SUMMARY

Radiant energy is a simple and effective method of fever therapy and can be used with relative safety in young children.

Controlled high fever is especially valuable in severe gonococcus infection. It may be of value in chorea and congenital syphilis.

In conjunction with other physiotherapeutic measures fever therapy is of value in the treatment of chronic infectious arthritis.

DISCUSSION

CHAIRMAN: Dr. McBryde's presentation is open for discussion.

DR. WARD: Mr. Chairman and Members: This paper to me has been very illuminating as well as interesting, and I know it has entailed a tremendous amount of work. It is interesting to me particularly from one standpoint. I know there is one man in the audience who agrees with me and that is Dr. Smith. About fourteen years ago I wrote a paper on "Significance and Treatment in Fever," and Dr. Smith believed so firmly in what I had to say that he has had me repeat it every year, although I have tried to get out of it and talk about something else. Hippocrates said that fever is remedial in purpose and effect, but unfortunately not many physicians believe that, judging from the way they treat their patients. We have known for a great many years that certain types of syphilis are treated with malaria therapy and other methods involving the production of fever. If this is remedial, as undoubtedly it is in certain cases, does it not seem inconsistent, unwise, almost malpractice, for a physician to give anti-pyretics to reduce temperature when he goes to see a patient? To my mind it is.

The next question is, should fever ever be reduced? Should we ever make an effort to reduce temperature? Certainly, we should. Then what criterion do we have as to whether it should be reduced? In any case where the temperature is 103, 104, 105 or 106, he should be guided entirely by the effect which the temperature is having on the patient, bearing in mind that temperature is one of nature's methods of fighting infection. Otherwise, I would not reduce temperature when there is infection. If an individual patient is extremely nervous, or in the case of an infant, if the infant comes of nervous stock, and we know from experience that infant will be thrown into convulsions if the temperature goes above 103 or 104, give a sedative to keep the child from having convulsions, but don't give a medical anti-pyretic, many of which are harmful if used in large doses; and if it is indicated in any given case to reduce the temperature, use hydro-therapy.

In conclusion, I should like to say this, as an example of what I am

trying to get over to you: within the week I was asked by a general practitioner to see a child three years of age who had lobar pneumonia, with a temperature of 105. He had her in an evaporation bath. This had no effect upon the temperature but it did quiet the patient. He did not request me to see the patient but did request me to go to the hospital and tell them how to get her temperature down. I went to the hospital, examined the child, found she was not nervous, was happy and bright and taking food pretty well, and I merely left a note to this effect: "It is very fortunate that the bath did not get the temperature down. Leave it alone."

CHAIRMAN: Any further discussion?

DR. SIDBURY: I have gotten two points which Dr. McBryde brought out, and one is the importance of the use of sodium chloride in treatment in the box. We know a number of patients have died in the box; and we have found that if patients were given sodium chloride they stood the hot box better. And the second point: Dr. McBryde feels that vaccine therapy is safer and as effective as the hot box therapy. I have used that in a few cases of chorea with satisfactory results. And typhoid therapy is a very simple and inexpensive remedy. While the box is, of course, not expensive, it, of course, is not practical to every practitioner in North Carolina who wants to use it in fever therapy.

CHAIRMAN: May we have a word from Dr. Craven?

DR. CRAVEN: I was interested in Dr. McBryde's paper. I think one thing he didn't say or observe about chronic arthritis patients is that in working with them in conjunction with an orthopedist, the adjustment or stretching of joints that are very stiff becomes very simple after a heat treatment, and it is very important as a preliminary for some orthopedic treatments.

DR. SMITH: The first time I had any contact with fever therapy was in 1923. I saw a patient with encephalitis. I had a letter from a doctor in Chicago recommending fever therapy and an injection of typhoid vaccine. I started that. It was the most spectacular thing I ever saw. The temperature jumped to 105, 106, 107, and I turned gray. That is the time I got my gray hairs. I was giving 12 treatments. I hadn't heard anything of the treatment before, but was willing to try anything once, and carried out the treatment. I hear from the patient occasionally, but he hasn't been benefited by the treatment, much to my regret, after giving twelve treatments. But in chorea it certainly does give some remarkable results. And you can use it with safety and certainty, if you follow the directions of Smith and others who have published articles on the subject. Dr. McBryde has given us a very good discussion of the whole subject.

CHAIRMAN: Is Dr. Davidson with us?

DR. DAVIDSON: Dr. Sidbury misunderstood Dr. McBryde. That applies only to chorea. It does not produce anything like the spectacular results of the hot box. There is some doubt as to whether the hot box

and typhoid are equally good in chorea. Typhoid is the simpler and easier method, but some people think the hot box is better. I had a long talk with Sheppard Warner of Atlantic City yesterday. He applied it to a great many diseases other than those listed in Dr. McBryde's paper, heating the patient up to 21 hours, which I think is a pretty heavy strain on the patient. I think Dr. McBryde will agree that six or seven hours, repeated, will give us as good results as fourteen.

I would rather see a patient with a high white count in pneumonia than low. The same thing is true of fever. More of a defense mechanism than a thing to be avoided.

CHAIRMAN: If there is no further discussion, I will ask Dr. McBryde to close.

DR. MCBRYDE: I thank the doctors for their kind discussion; and especially Dr. Ward's was well taken. Fever reducing remedies or medicines to reduce fever when it does not seem to have a severe effect on the patient. . .

We haven't had any deaths of children we have treated. Deaths were reported in early pioneer work. Joint manipulation is certainly easier after treatment. We had one child who had very bad tonsils and adenoids. It was impossible to open the mouth wide enough to take them out. But the mouth was easy enough to open after the fever therapy treatment. The nurse advanced the idea of giving him chewing gum, too. We have had one child recently who had chorea as well as myocarditis. . . There is no doubt but that myocarditis becomes worse after fever therapy. It seems to me we have to approach the question of active rheumatic infection of the heart with caution when it comes to fever therapy. Twelve hours is the longest treatment we have had for any one child. He stood that very well. I believe one treatment of twelve hours will have as much effect on the governing cause as will two treatments of seven or eight hours each.

MILD HYPOTHYROIDISM IN CHILDREN

By JOHN R. ASHE, M.D., Charlotte, N. C.

During the past two years I have accumulated a series of ten children whose symptoms, as judged by the history, clinical findings, usually including basal metabolic rate, and the therapeutic response to thyroid extract, were best explained by varying degrees of thyroid deficiency.

Our text books describe conditions of total or nearly total failure of function of the thyroid gland—cretinism and childhood myxoedema—in such detail that there should never be any difficulty in our recognizing these conditions promptly. But the milder types of thyroid failure are usually not mentioned at all or are passed over with very brief and indefinite descriptions.

The medical literature of the past five years contains a number of articles on mild hypothyroidism in adults, the majority of these writers

emphasizing its frequency, its many and varied symptoms, its most indefinite clinical picture often leading to failure of diagnosis, and the most gratifying therapeutic response to thyroid medication, which, at times, is spectacular. During this five year period, with the exception of an article by Cason on mild hypothyroidism in adolescent girls and one by Dorff on a more severe degree of thyroid deficiency than my cases presented, there is nothing in the literature on this condition in children.

During the twenty-one years of my pediatric practice in Charlotte I have seen so few cretins that I have considered this condition rare in our vicinity, but the evidence that I am presenting certainly strongly suggests that milder types of hypothyroidism occur with fair frequency.

I am, as briefly as possible, reporting six cases, each of which will emphasize some particular point. To save repetition, none of these children presented any of the signs usually seen in cretinism. Four of them had been under my care since birth, one since six months of age, and one since his third year.

Case 1: D. B., aged 16 years:

This girl had graduated from my practice and I was called back in desperation because I had always been able to control her better than anyone else. Her home environment was a little difficult because of lack of sympathy from a father who had never been sick in his life and an apprehensive over-solicitous mother. She had always been a temperamental child, rather difficult to control. Over a period of several weeks she had been rapidly becoming more and more uncontrollable and had reached a stage of depression so severe that she stayed in her room all the time, usually in bed, refusing to go to school or to have anything to do with any member of her family. She complained of vague pains in lower abdomen and pelvic region and had been examined by a competent gynecologist with negative findings. She also complained of pains over her heart and could not be convinced that she did not have heart trouble. She ate very poorly and refused entirely a number of her meals. She was a most unhappy looking, extremely depressed girl, but physically was a normal, well developed, well nourished, healthy looking individual. After considerable difficulty a metabolism test was done and the reading was —14%. She was put on a ½ grain of thyroid extract twice a day, with a startling response. In three or four days she was an entirely different girl and in a week she was back in school, behaving normally toward everyone and for the first time in months beginning to show some interest in the opposite sex. Ten weeks later her metabolism rate was —4%. She continued taking thyroid for nine months during which time her sisters could tell from her behavior when she would forget to take her dose. Her metabolism was again taken six months after treatment had been discontinued and was plus 4. Since the beginning of thyroid therapy she has been perfectly normal in every way. This girl presented all three of the symptoms which have been most

helpful in suggesting the presence of mild hypothyroidism—altered function of brain, undue fatigue, and indefinite pains.

Cason reported a small group of girls from 13 to 16 years of age with a variety of behavior problems and lowered metabolic rates averaging around —20. By administration of sufficient thyroid extract to bring their metabolic rates to normal these girls were rather spectacularly restored to normal emotional states.

Haywood and Woods state that insufficient thyroid secretion sometimes shows its most striking effect through malfunction of the brain cells. The patient may become depressed and apprehensive, thought may become slow and body movements retarded. The condition is easily mistaken for a depressed psychosis, or there may be irritability and excitement, leading to a diagnosis of mania.

Hensel states that hypothyroid symptoms may occur at any time of life but are particularly common at certain ages, namely, at puberty, at the menopause, during and following pregnancy, and in the convalescent period following infections, particularly influenza.

Crile and associates state that hypothyroidism may be the cause of behavior problems in children and mention startling results following the administration of small doses of thyroid.

It is a well known fact that the thyroid enlargement that occurs rather frequently in girls at about the age of puberty is often associated with a diminished degree of thyroid activity, and some authorities recommend treatment with small doses of thyroid extract in addition to administration of iodine.

Case 2: H. M., aged 10 years:

This boy, of most neurotic parentage, had been a difficult feeding case and undernourished until six years of age. Since then he had been a healthy child. When four years old he had a severe fracture of the skull, but after a short period of a few hours with mild symptoms of concussion, this caused no particular trouble except that it was most difficult to keep him in bed for three weeks. He had always been a very nervous, high strung, active boy, controlled with some difficulty. During the first four years in school he did very well. In his fifth year he became more and more unmanageable, both at home and at school, and the principal finally informed the parents that unless something was done he would have to be dropped. He had become emotionally unstable, crying at the slightest provocation, and was most impertinent and disagreeable. Physically, he looked well and was entirely negative on examination. His basal metabolic rate was —16%. He was put on ½ grain of thyroid extract twice a day, and was definitely better in less than a week, much happier at home and behaving much better in school.

With this boy mild hypothyroidism is probably not the whole story, as his heredity and environment certainly are large factors in his psychic

makeup. The results of thyroid therapy are obscured to a considerable extent due to the fact that he was also under the care of a psychiatrist.

His case is included in this report because his evidence of hypothyroidism was entirely on the emotional side.

Case 3: C. R., aged 9 years:

Past history had been negative except for a thymic attack during an illness with pertussis at two years of age, treated by several exposures to X-ray. One year ago he was brought to me with the history that for several weeks he had been listless, had tired easily, had not done well at school, and had become most emotionally unstable, crying for the slightest cause. He also complained of vague pains in the muscles of his legs. He was entirely negative on examination; his height was 56½ inches and his weight 79½ pounds, the expected height and weight of a boy three years older. His metabolic rate was —33%. He was put on ½ grain of thyroid twice a day. This dosage was continued for six months when it was decreased to ½ grain once a day. In 4 or 5 days after treatment was begun he was feeling much better, all of his symptoms had disappeared and he has been doing well ever since. Metabolism test repeated in three months was —10. He continued taking ½ grain thyroid extract until two weeks ago. He now feels well and basal metabolic rate four days ago was plus 7. Bone age studies, by roentgen ray, show normal appearance of metacarpal ossification centers. In this case emotional instability was the most pronounced symptom.

This boy had been under my care for nine years and had been seen frequently, but until his visit a year ago there had never been any reason to suspect that hypothyroidism was present. When, in getting up this report, I called his mother to ask her some questions about him, she voluntarily came to my office to tell me how happy she and her husband are that he is apparently normal in every way since starting small doses of thyroid.

Case 4: L. S., aged 6 years:

This little girl had always been well and for this reason I had seen her infrequently. Her family had felt the depression severely. The father, formerly a railroad fireman, had always made a good living for them, but had been laid off for three years and had finally been forced to go on relief. He had had a nervous breakdown and has recently been found to be a mild hypothyroid. This child was brought to me in May 1935 with the history that for several months she had shown an increasing lack of energy. She had reached the point of fatigueability to the extent that it was difficult to keep her out of bed. She would get up at the usual time but would quickly go back to bed. She would not go out of the house and would not play with the other children. She had a very poor appetite, was constipated, and complained of vague pains in her legs. In my office she was very listless and quiet and apparently even sitting in a chair required considerable effort. Examination was entirely negative. Height was 43

inches and weight 38 pounds, slightly underweight but not under height. Her metabolic rate was —32%. She was put on ½ grain of thyroid extract twice a day. In 4 or 5 days all her symptoms had disappeared and three and one-half months later treatment was discontinued by her parents because she was doing so well. So far, for nine months, she has done well without treatment. This year she was put in school and in spite of a very severe winter, did not miss a day and led her class. She is now very energetic, plays outdoors all day long and looks perfectly well. Metabolism test was repeated three months ago and was —12. She has been doing so well, however, without thyroid administration that we have been letting her go along untreated. But there is a delay of about a year in her bone age as determined by X-ray 4 days ago. The centers of ossification of the trapezium and scaphoid, which normally appear at 5 to 6 years, are not yet present. It is my intention to resume treatment here because of the great importance of the thyroid hormone on growth.

This child, like the one preceding, was within 8% of the metabolic reading usually considered as indicating complete absence of thyroid activity; yet there was nothing in her appearance suggesting cretinism, and thyroid therapy for a few weeks changed her to a happy active child. The chief symptom here was a most pronounced lack of energy.

Case 5: T. B., aged 9 years:

This boy had frequent upper respiratory infections during the first few years of his life, usually attended by considerable aching of legs. When two years old he complained for several months of pains over his sacral region. These pains occurred during the day or night and had no relation to exercise. At that time examination, including X-ray of pelvis, was negative and the pain continued for several months in spite of attempted immobilization. In January 1935 he was brought to me because of indefinite pains in the calf of his left leg. Examination was negative. He was referred to an orthopedic surgeon who thought that the pain was due to too much pull on his tendo achilles. Strain was taken off this tendon by padding the heel of his shoe. Two months later he returned because he had gotten no relief from the pain in this leg, and was now complaining of similar pain in the other calf. He had always been a quiet, inactive boy, preferring to stay in the house and read rather than play out of doors with other boys. His mother thought that he became tired much more easily than her other son. Because of these suggestive symptoms a metabolism was done and the rate was found to be —29%. Examination was entirely negative. Response to thyroid here was most happy, his pains disappearing in 3 or 4 days. Here the predominating symptom was indefinite pains in different parts of body.

It is very likely that in spite of negative physical findings this boy had been a mild hypothyroid for a number of years.

Case 6: D. K. S., aged 7 years:

This little girl had suffered with frequent upper respiratory infections.

Tonsils and adenoids had been removed at the age of five years. She had never been robust, and had been a poor eater, and for this reason the family had moved to the country two years ago. There the child had improved considerably, and at the onset of the illness that apparently precipitated lowered function of her thyroid she was in splendid condition. During the month of January of this year she had a severe upper respiratory infection with otitis media and cervical lymphadenitis, complicated by pyuria. She had considerable fever for about three weeks. Convalescence was rather slow, and a little later when she was able to return to school the teacher advised the mother to have her looked over as she was sluggish and could not keep up with her studies, cried easily from the slightest cause and was apparently very unhappy. Her mother observed that she tired easily, had a poor appetite and showed considerable reluctance in staying up in the mornings. Examination was entirely negative. She was 5 inches and 4 pounds over the expected height and weight for her age. Her basal metabolic rate was —13. She was put on ½ grain of thyroid extract twice a day and in two days all of her symptoms had disappeared. She now looks wonderfully well and is happy and energetic. She has been on thyroid for one month and repetition of the metabolic test gave a reading of —19. For this reason dosage has been increased to one grain a day.

Simple tonic treatment in this case would probably have been a complete failure.

There was never any indication of hypothyroidism in this child until after her illness one month before the condition was discovered. A number of writers on adult hypothyroidism stress the importance of infection damaging and increasing the function of the thyroid gland. However, infection can also produce the opposite effect of increasing its output of thyroxin. I have recently had an eight year old girl, who following a severe illness with pneumonia and empyema lasting for several weeks, developed very much the same train of symptoms—lack of energy, fatigueability, poor appetite, emotional instability and indefinite pains in legs. Her metabolic rate was plus 50, her pulse rate was increased and she developed slight enlargement of her thyroid gland. On rest and iodine and high proteid, high fat and low carbohydrate diet she became normal in metabolic rate and clinical symptoms in about three weeks.

In summarizing the symptoms shown by the six cases: four presented definite evidence of emotional instability; five complained of vague pains in various parts of the body; and five suffered from undue fatigue.

The active principle of the thyroid gland, thyroxin, through its catalytic action on chemical changes in all of the body cells normally has a tremendous influence on all the body functions. Variations in the activity of this gland resulting in either increased or decreased output of thyroxin produce changes in every tissue of the body. The symptoms of hypothyroidism are therefore many and varied.

The diagnosis of mild hypothyroidism in children is made from the clinical history and when possible confirmed by a lowered metabolic reading. Physical examination adds no positive evidence.

The most important symptoms are lack of energy, shown particularly by a disinclination for physical activity and undue fatigue, moderate mental sluggishness and emotional instability, accompanied at times by behavior problems or mental changes, particularly on the depressive side, and various indefinite pains in different parts of the body. Other less common symptoms are constipation, diminished tolerance for cold, headaches, and irritability.

With the aid of an excellent technician we have found the basal metabolic test entirely satisfactory in children as young as six years of age. In taking metabolism tests in hypothyroid children there is an added factor in safety of interpretation in the fact that any error through leakage or lack of coöperation will be on the plus side. It is well, however, to remember that lowered activity of the thyroid gland is not the sole cause of lowered metabolism. Other causes are inanition, anemia, hypopituitarism, ovarian hypofunction, Addison's disease, and depressed mental states. Many investigators believe that the normal range of the metabolic rate is wider than from plus 10 to —10 and are inclined to consider lightly readings as low as —20. There is apparently no variation in rate due to differences in climate.

As further aids in diagnosis and control of treatment in severer types of hypothyroidism in children the blood cholesterol level, the extent of renal excretion of creatine and roentgenological determination of bone age have been found to be very useful.

Epstein, Lambe, Lahey and others have shown that there is an inverse relationship in the blood cholesterol to the metabolic rate and the degree of activity of the thyroid gland. Lahey, Bronstein, Hess, and others have found the level of the blood cholesterol more useful than the metabolic rate in determining the degree of thyroid function and in regulating replacement therapy in severe hypothyroidism. Three years ago I reported before this society the remarkable progress of a cretin, who, too young to take the metabolism test, had been considered to be doing very well on thyroid dosage determined entirely by clinical appearance, but who improved wonderfully when sufficient thyroid was given to bring her cholesterol down from 429 to 135 mg. per cent.

Hinton states that in adults with mild hypothyroidism with metabolism readings as low as —8 to —10 the cholesterol will be at the upper limit of normal or just above. The range of normal values in children is wide, from 129 to 217 mg. The value of this procedure in mild degrees of hypothyroidism in children should be investigated.

Rose in 1911 discovered that creatine was normally present in the urine of children up to puberty. Later Beuner and Iseke observed that hypothyroidism in children was invariably accompanied by a diminution

and sometimes by a complete suppression of creatine excretion, and that in these children the creatine excretion returns to normal after administration of thyroid extract. Poncher and associates and Hess believe that this relatively simple laboratory procedure should be useful in the diagnosis of hypothyroidism in children, particularly in borderline cases. And they believe that it should be very useful in controlling the treatment as its response to thyroid extract is very much quicker than the changes in either the blood cholesterol or the metabolic rate.

Dorff and others have shown that hypothyroidism developing before puberty and of sufficient degree produces definite delay in the unfolding of the osseous system, shown by late appearance or poor massing of the ossification centers and epiphyseal nuclei, and that complete replacement therapy accelerates the development of this system towards normal. With the collaboration of Dr. C. C. Phillips, roentgenologist, we have recently investigated this possibility in two children who, in the beginning had similar low metabolic rates. One's bone age was normal but the other showed definite retardation of one year in the appearance of the ossification centers.

With definite symptoms of hypothyroidism and a lowered metabolic rate the margin of safety in administering thyroid extract is large and over-dosage with the appearance of toxic symptoms is unlikely. Complete replacement therapy in children who have total absence of thyroid function requires from 2 to 4 grains of thyroid per day. In these children with mild hypothyroidism the effective dose is never more than one-fourth this amount. I have, with considerable caution, administered thyroid extract to several children too young to have metabolism tests and to one child whose symptoms were most suggestive but whose rate was normal. I have been unable to find any evidence that this is a dangerous procedure.

Wieland states that the use of thyroid extract is not dangerous and that large doses produce no disturbance in general health of children. Prolonged use of large doses can produce thyrotoxic symptoms—headache, dizziness, palpitation, vomiting, and other gastrointestinal disturbances with increase in pulse and respiratory rates. These symptoms, however, disappear as soon as the thyroid administration is discontinued.

Krogh and others point out that by administering thyroid in sufficiently large doses it is possible, in both man and animals, to produce a thyrotoxic condition, but that the condition of the individual comes back to normal in a few weeks after the administration of the thyroid substance is discontinued. In feeding thyroid to guinea pigs in large amounts for one week there was considerable increase in metabolism but no change in the thyroid gland. Feeding large doses for a period of eight months produced very slight changes in the gland.

In prescribing thyroid extract it is important to remember that the preparation as put out by different manufacturers varies considerably in calorigenic effect. For this reason any one particular product should be

specified in order that the refills will be of the same strength. Original sealed packages should be ordered as the substance deteriorates with age due to bacterial decomposition. Most authorities agree that the use of thyroid extract is preferable to thyroxin in children.

The therapeutic objective is to relieve the child from all symptoms with the smallest possible daily dosage of the dried gland. Therapeutic response is usually very prompt, there being definite improvement within forty-eight hours. Failure of symptomatic improvement will usually mean that the underlying cause is not thyroid deficiency.

The duration of the treatment necessary varies considerably. A number of these children after treatment for one to three months seem to be in perfect health and apparently no longer need thyroid extract. Only one of these cases reported to you has been on thyroid for as long as one year.

Possible explanation of these apparent recoveries after definite evidence of deficiency is the iodine content of the thyroid extract and the resting effect that an additional supply of thyroid extract exerts on the gland itself.

CONCLUSIONS

This series of children with definite evidence of mild hypothyroidism strongly suggests that this condition is fairly common in our locality.

The treatment with small doses of thyroid is most effective in restoring these children to perfect health.

A large percentage of these children reach a state of recovery making further administration of thyroid unnecessary.

A determination of the value of the cholesterol level in the blood, the degree of excretion of urinary creatine and bone age studies in the mild type of hypothyroidism in children should be most interesting in further investigating this fascinating condition.

CHAIRMAN: Before we have the next paper we will have the report of the Nominating Committee.

DR. SIDBURY: The Nominating Committee wishes to submit for Chairman the name of Dr. Arthur London, of Durham, and for Vice-Chairman and Secretary Dr. J. A. Martin, of Lumberton.

CHAIRMAN: I feel the Society is to be congratulated on the selection.

Dr. London and Dr. Martin are unanimously elected as Chairman and Vice-Chairman, respectively.

CHAIRMAN KEITH: It is a pleasure to me, and I think the Society is to be congratulated on having Dr. London and Dr. Martin to take us through our next year. I would like for Dr. London to come up and take charge from now on.

CHAIRMAN LONDON: I do appreciate this honor, and I will try to do the best I can. It is getting late, and we will go on to the next paper.

Dr. Keith: I certainly would like to offer the congratulations and appreciation of the Society for having Dr. Branch with us. He has been a big help to us today. The Society is certainly indebted to him for helping us out in our time of difficulty. Why we don't have a secretary along with the lanterns I don't know. We should. This year and last year we have had this difficulty. I hope that will be remedied next year. On behalf of the Society I thank Dr. Branch. We are deeply grateful to you, Dr. Branch.

DISCUSSION

WITH PRESENTATION OF CASES DEMONSTRATING THE VARIOUS TYPES OF TUBERCULOUS LESIONS OCCURRING IN CHILDHOOD

By Dr. S. M. Bittinger

When I decided to accept your Chairman's kind invitation to present a paper on Childhood Tuberculosis before this Pediatric Section I felt that it would probably be interesting first to present cases showing the various types of lesions with a brief summary of case history and physical examination, and especially to show the various lesions by X-ray, followed by a brief discussion and summary of the conclusions to be drawn.

The primary complex as represented by the primary focus and the involved tracheobronchial or other regional glands makes up the so-called pathological picture of childhood tuberculosis, but this does not constitute by any means the whole picture as far as active clinical disease is concerned. In fact, it constitutes only a very narrow field. It is the various types of lesions that follow the establishment of the primary complex that really constitutes the clinical disease in its various manifestations, and thus we are particularly interested in these various types of lesion.

From our studies in childhood tuberculosis we are impressed by the fact that the childhood type of lesion is quite common. We have demonstrated it by X-ray in the following per cent of our cases studied and statistics compiled through 1932:

Of the 119,152 children tested 16,097 reactors were studied, with the following results:

Childhood type tuberculosis	1,716
Adult type tuberculosis	102
Childhood and adult type tuberculosis	49
Extra-pulmonary tuberculosis	22
Extra-pulmonary and adult type tuberculosis	6
Suspicious of tuberculosis	1,970
Not tuberculous	12,232
Combined non-reactors (103,055 plus 12.232 equals)	115,287

Also many cases with positive tests have the primary complex, but it is so small as not demonstrable by physical examination or even by X-ray,

and also there are those cases in whom the complex has been absorbed, probably this latter occurring in many cases, just how many is entirely problematical. Only a very small percentage of cases showing the primary complex develop further lesions, the so-called adult type of the disease. And even these cases that do develop the adult type of lesions many of them clear up as they do in the adult, at times without any special treatment. Though of course the percentages of favorable outcomes is increased by proper treatment, either at home or in sanatoria, just as the lesion in the adult is improved. They respond about as well to the usual regime and also to the various types of compression therapy, though these latter methods usually are not necessary. When the more radical treatments are necessary the results obtained are similar in every way to those obtained in adults. Often rather extensive lesions show remarkable improvement, especially if they are isolated from repeated re-infections from adult open cases. These facts are borne out by statistics that show the lowest mortality from tuberculosis occurring between the ages of two and twelve years.

The primary complex usually causes few or no symptoms, in fact, there is never a fatal outcome. The serious symptoms and unfavorable prognosis are caused by the secondary phenomenon which occurs in a relatively small percentage of cases, as shown above in those who develop the adult type of lesion that follows the development of cellular sensitivity. The cases that develop the adult type of lesion usually show a surprising amount of resistance with definite tendency to heal by the old familiar methods of absorption, fibrosis and calcification as I have endeavored to show by the above presented cases. In fact, these children develop a surprising immunity to infection, almost if not equal to that of the adult, and they show definitely more resistance than individuals in the so-called teen age. Even cases developing various foci of infection as shown by healed lesions in various organs, frequently recover and occasionally cases of the definite miliary type finally get their disease under control. This evidence of marked resistance is emphasized by so able an authority as Dr. Allen K. Krause, who probably has a better grasp of the problems of tuberculosis infection and immunity than any one individual engaged in the field of tuberculosis work. Thus in the vast majority of cases the prognosis is good. Many individuals healing their lesions, even when they receive rather inadequate treatment, and as in the adult the more adequate the treatment the quicker and more complete the recovery. The more extensive the lesion recovered from naturally the more active immunity resulting.

Repeated small infections, if they could be controlled, would be beneficial in enabling a patient to keep his immunity at a high level. The great trouble is that the child may be exposed to a lethal dose of active virulent bacilli which may break down his acquired resistance because as we would

naturally conclude the individual resistance differs markedly for different patients, some being able to control more numerous and virulent bacilli than others.

It was felt by Calmette that by the use of his vaccine in which the dosage of bacilli could be more or less accurately determined that gradually the individual's immunity could be built up as it is in other diseases. However, up to the present time the results have not been very encouraging, though experimental work is still being carried out. Thus we can see that one of the great problems at present is to isolate the child as far as possible from contact with an open case, best by diagnosing the disease early before the lesion progresses to the infectious stage, or if at the time of the diagnosis the disease has already reached the more advanced stage, with positive sputum, then send the patient to a sanatorium if possible, for there the patient is not only given a chance of getting his disease under control, but is also taught how to protect others from infection. If the above procedures are not possible then remove the child from contact and isolate it as far as possible.

Again, it is manifestly rather foolish to send a child to a preventorium or isolate the child in some other way for several months and then return it to the same tuberculous environment. Suppose the child has recovered from either childhood or an adult type of lesion at the time of recovery his immunity is probably high. However, we know that immunity certainly varies at times, and if he is re-exposed to infection there is always danger that sooner or later he again may develop actual clinical disease. Much work has been done along this line and much more needs to be done. The holding of adult clinics and encouraging all individuals, both adults and children, who have been exposed to open cases, to have not only one examination, but to have repeated examinations at intervals of six months to a year. Also to make possible an increase in the number of available hospital beds to take care of the patients who need treatment, I feel very certain the more that is done in these directions the quicker and more thoroughly will the problem of tuberculosis in childhood be solved.

DISCUSSION

Chairman London: Dr. Bittinger's paper is now open for discussion.

Dr. Elias: These are extremely interesting illustrations that Dr. Bittinger has given us. I was just thinking over about thirty years of practice here, and am not able to recall a single child that has died of tuberculosis other than a memingeal tuberculosis. We in Asheville would find a large number of tubercular patients. In the earlier days we might have overlooked them. Being unable to find any that died with anything that even suggested tuberculosis, I just wondered what the death rate is among young children.

Dr. Bittinger: I don't think there are any statistics. I don't know the exact death rate in that group, between eight and twelve years, but very light. Most cases of . . . miliary tuberculosis die before the age of two years.

Chairman London: If there is no further discussion, the Section is adjourned. All members of the North Carolina Pediatric Society will remain for a short business session.

Adjournment.

SECTION ON PUBLIC HEALTH AND EDUCATION

Dr. N. Thomas Ennett, Greenville, *Chairman*

Tuesday, May 5th, 2:00 P. M.

Chairman: I knock heavy because I have a heavy gavel. I cannot say the time has arrived for us to begin. I will have to say the time has passed. I was waiting for the Secretary, and she has been sitting here on the second row. One thing I want to request the audience to do: if you have to talk, go outside to do it. Let's have it as quiet as possible. I think it is not very satisfactory to the essayist to have competition from the audience.

The first paper on the program is by Dr. G. W. Kutscher, and his subject is, "Protecting Infants and Children by Inoculation." Dr. Kutscher.

PROTECTION IN INFANTS AND CHILDREN BY INOCULATIONS

By Dr. G. W. Kutscher

The 15 minutes allotted for this presentation demands consideration of the subject without further introduction.

What I have to say will include my personal evaluation of the several inoculations based on practical experience in their administration plus a review of the recent literature. Chiefly for the sake of completeness let us discuss briefly some phases of the prevention of mumps, chicken-pox, tetanus, rabies and typhoid fever and then proceed to a study of the more troublesome diseases.

Chicken-pox and mumps are two diseases every healthy child can afford to have. There are no complications as a rule and they are better handled during childhood than later. Chicken-pox is an embarrassing disease to entertain as an adult and mumps carries with it complications not encountered during childhood. Both diseases may be prevented temporarily by the intramuscular injection of 15-40 c.c. convalescent serum before the 6th day following exposure.

When is tetanus antitoxin indicated and when is it safe to treat the injured patient without it? No one can answer that question for us. Unfortunately we must contend with it every time we treat any injury or a burn. Not long ago I was called upon to administer the 6th prophylactic dose of tetanus antitoxin to an 8-year-old boy, because his father dreaded tetanus to that extent. In such cases as well as in industrial cases, the new prophylactic tetanus toxoid is indicated. The first injection of 1 c.c. is

followed by another dose of 1 c.c. in 3 months. The third and last dose of 1 c.c. is given when the patient suffers an injury that would otherwise call for tetanus antitoxin. When tetanus toxoid has been given, the antitoxin is not to be used. The still newer product, tetanus (alum precipitated) toxoid induces in a dose of 1 c.c. a higher degree of immunity than 3 doses of the toxoid without alum. The duration of immunity following the administration of tetanus toxoid is not accurately known but it is believed that it lasts three years.

While only 15-20% of persons bitten by a known rabid animal develop hydrophobia in the absence of treatment, Pasteur treatment is indicated in every exposed case because of the 100% mortality in the presence of the disease. The benefits from Pasteur treatment last for 12 to 14 months—thus, if a person who has recently had the treatment is re-exposed within that time to another rabid animal it is not necessary to repeat the treatment.

In 1935 the incidence of typhoid fever in North Carolina showed a marked increase over previous years, with a total of 645 cases. Outbreaks of typhoid fever are comparatively rare in the larger cities, but the contrary is true of the disease in the country districts of our State. The campaign against this diesase must be carried on both in the city and in the country, if we are to save ourselves from its scourge. Children should be routinely immunized by the 5th year of life. I use one-half the adult dose under 8th year and full dose from the 8th year on. It requires about 3 months to attain immunity from the vaccine. Typhoid vaccine is indicated especially where children are going to travel or where the food and water supply is questionable in a rural community. Protection probably is maintained by giving an additional inoculation of 1 c.c. each year following the administration of the original 3 injections.

The letters, B. C. G., signify Bacillus Calmette Guerin, an attenuated form of the tubercule bacillus incorporated into a vaccine. This vaccine is used for the protection of infants against tuberculosis. Nearly 750,000 children in France have been given this vaccine without the development of serious sequelae, according to one of the discoverers of this method of vaccination, Guerin himself. At the present time every 5th child born in France receives B. C. G. vaccine exclusively by mouth. There, re-vaccination is being done on a large scale.

Wallgren of Sweden uses the vaccine intracutaneously. His reports stand out as the most scientific study of the question that has yet been presented. He has had no failures or deaths in over 250 cases. Outstanding features of his study include, (1) no infant was selected for immunization until it was certain that it had not already been infected; (2) no infant was deemed to have become effectively immunized until a positive tuberculin test resulted from B. C. G. vaccination; (3) each case was followed up and at intervals subjected to clinical and radiological examination. Intracutaneous vaccination produced quicker, more lasting and more

complete protection than did oral administration, the latter method often failing to produce the necessary positive tuberculin skin test. That there is a degree of immunity produced there seems to be no doubt, but it is impossible to state that the amount of protection produced warrants the risk attended. The organisms are attenuated when administered but they may become virulent within the body. The reports of this work are intensely interesting, but the American physicians have yet to be convinced of its safety and lasting value.

Alum precipitate toxoid has earned its rightful place as the active immunization agency of choice against diphtheria. The single injection that is necessary protects 90 to 95% against the disease. City children have a natural immunity which extends through the first 6 months of life, but country children are less fortunate in that only 50% of them have a natural immunity up to the 9th month of life. Why, oh why, will physicians wait beyond the 6th month to protect a child against such a disease as diphtheria, Greengard's report notwithstanding. Alum precipitate toxoid produces only one important reaction in the child's body—and that is immunity. It is the baby that needs this protection most and it is the baby that it disturbs the least. When 50% of the school children of a community have been protected, diphtheria ceases to be a major health problem. Let each one of us be certain that we are responsible for the 50% that are protected and not for a single one of the 50% that are not protected. The unnecessary 1720 cases of diphtheria with 158 deaths during 1935, shows plainly that some of us have failed to do our part to wipe out diphtheria. Gentlemen, wiping out diphtheria is *our job,* not the other fellow's!

Inoculation against diphtheria does not necessarily mean immunization against the disease, but if the disease does develop it is usually of a mild degree. In my private practice I make a flat charge for the administration of the toxoid and the subsequent Schick test. In this way I get to do a follow-up Schick test on all my patients. Yet I have learned that a negative Schick test does not guarantee immunity. I have had three cases of diphtheria develop in three patients, who had negative Schick tests. The British and German literature refer to this discrepancy. In one report there were 16 cases of proven diphtheria in 2,761 negative Schick individuals.

Passive inoculation produces immunity for only 2 to 3 weeks. Parents must be reminded that the disease itself does not produce permanent immunity such as occurs in chicken-pox and scarlet fever. Following the disease the child must be immunized with toxoid as though he had never had the disease. It might be of interest to add that the reported death rate from serum inoculation is one in every 60,000 inoculations.

POLIO

In regard to poliomyelitis I offer authoritative opinions that to me sound conclusive for the time being at least. It has been my privilege to hear Dr. Kolmer report his observations in person. I am also acquainted

with all the papers delivered in the polio symposium at the Southern Medical Meeting at St. Louis last fall, as well as much additional literature on the subject. So far as I am aware the reports at the Southern Meeting are the latest on this particular subject.

Rivers has stated that he felt the Brodie vaccine was both inefficient and harmless, but since he made that statement 2 cases of polio have developed in children to whom this vaccine had been given. But we can quickly dismiss the Brodie vaccine as it has been withdrawn from human use by its advocates. This was done at the request of the Warm Springs Foundation in Georgia which had been assisting financially in the research on this particular vaccine.

The Kolmer vaccine remains to be considered. With this product my experience has been limited to the administration of 2 courses of the vaccine to two children whose father insisted that I give the injections. I was afraid of the Kolmer vaccine last spring for similar reasons to those that I now hold. Further proof of the safety and protective value of this vaccine is not only indicated but demanded. Following a case of polio a definite immunity develops against further attacks of the disease. The same degree of immunity does not necessarily develop following the administration of the vaccine. Neutralizing products against the virus do not mean immunity production.

Furthermore there is no proof that monkey passage polio virus is less infectious for man than the natural human virus. Sodium ricinolate is not a safety guard against the reactivation of the attenuated virus, according to Rivers.

Dr. James P. Leake, head of the U. S. Public Health Department, believes that the 12 cases of polio with 6 deaths all quickly following within 14 days after the administration of the Kolmer vaccine were due to the vaccine. He further informs us, "That in each instance of polio due to the vaccine in which the site of the injection and the site of the first paralysis is known, the site of the paralysis occurred either in the limb injected, or in the corresponding limb of the opposite side; in other words, the cells of the spinal cord first involved were at the same level as the injection. The anatomists tell us that the lymph streams accompanying the peripheral nerves do not enter the vertebral canal, so that there is no direct connection between the blood or lymph supply of a limb and the corresponding level of the spinal cord. These cases would therefore tend to show, what experimental work has already indicated, that the virus of polio travels along the nerve fibers themselves." I feel that Dr. Leake is absolutely fair and impartial in his criticism, but he is likewise drastically final when he says, "In any individual case the possibility should be left open that natural infection was operative, but the meaning of the series as a whole is clear to me, and I beg you (Dr. Kolmer) to desist from the human use of the vaccine."

The bitter criticisms of Dr. Kolmer's vaccine reminds us of the criticism suffered by Jenner, Semmelweiss, Pasteur and many other pioneers. So let us hope that the very near future will give us the answer to the poliomyelitis vaccine problem based on Dr. Kolmer's and Brodie's efforts to solve the problem for us.

MEASLES

The difficulty of achieving complete protection against an attack of measles lies in the uncertainty of the dose of serum required. The exact dose has not been determined due to many variables. Serum from adults who have suffered an ancient infection is practically worthless in supplying complete protection. Adult serum from a recent attack of measles on the other hand, is as valuable as childhood convalescent serum. In every case we must be certain that the person has actually had measles as well as being healthy and tuberculosis and syphilis free before using the serum. Pooled serum is far superior to individual serum.

To estimate the minimum dose of convalescent serum necessary to create complete protection the following method may be used. After the third year of life, multiply the age in years by two to get the number of centimeters of serum needed to completely protect. Thus a 6-year-old child will need 6 times 2 or 12 c.c. of convalescent serum. Of course it must be remembered that this immunity lasts for only a few weeks. A child already ill with diphtheria or scarlet fever and exposed to measles requires 5 to 6 times as much measle serum and in the presence of bronchitis, whooping cough and pneumonia, at least twice as much serum is needed to protect against the additional disease, measles. When giving serum for protection always give it before the 4th day following exposure.

Every physician can prepare his own supply of serum. Allow the drawn blood to stand, remembering that less than one-half of the given quantity of blood becomes serum after the clot has separated. Keep the serum on ice with one drop of 5% phenol added as a preservative, to every 40 c.c. of serum collected. This serum retains its potency for 6 months after which it suddenly loses 40% of its strength and at this potency it remains for the next 18 months.

The more frequent need of serum is to provide modification of the attack. This procedure is much simpler but certain principles must be followed. In this instance adult ancient-infection serum may be used with an expectancy of 70% success. Again convalescent pooled serum is preferable. With ancient-infection, 10 to 15 c.c. of serum will suffice, while only 3 to 5 c.c. of convalescent serum is required for modification. For modification the serum gives best results when injected on the 4th, 5th or 6th day following exposure. All injections are made intramuscularly. Serum reactions do not develop, but occasionally mild local or systemic reactions occur which are gone the following day.

Recently, immune globulin from placental tissue has been offered by

two leading biological houses. The attenuating dose is 2 c.c. and the protective dose is 4 to 5 c.c. for all ages. The advantages are (1) small dose, (2) uniform antibody content, (3) and ready availability. In my personal experience I am well pleased with the results obtained with this product.

From all sources we hear that modified measles are highly contagious. This is a problem, as many cases of modified measles are so mild as to be easily overlooked. Another factor lies in the much longer incubation period that results when serum has been used to modify the disease. In one of my patients to whom I gave convalescent serum for modification, the incubation period was 23 days. Under the circumstances I was certain of the first and only exposure to the disease in this particular case. What we all want to know is this: Is the duration of the immunity following attenuation permanent?

SCARLET FEVER

I hope the time will come when the memory of the reactions that follow the use of scarlet fever antitoxin and prophylactic vaccination have elapsed but I am still not yet willing to use any of the present-day products unless extenuating circumstances exist. There is a place for scarlet fever toxin—such as in breaking up severe scarlet fever epidemics, and in susceptible workers in communicable disease hospitals. The reliability and durability of the immunization that results from 5 inoculations is not as yet proven. It is too early to properly evaluate its worth. The wide discrepancy that exists between various reporters on the subject of the scarlet fever study is another indication for me to go slowly in accepting either scarlet fever toxin or antitoxin as routine inoculations. Scarlet fever toxoid is too new to properly evaluate its merits.

The committee on Prophylactic Procedure against Communicable Diseases of American Academy of Pediatrics does not recommend active immunization of scarlet fever strep. toxin as a general health procedure because of the local and general reactions. Also, the degree and duration of immunity have not been definitely established.

SMALLPOX

About 140 years ago Jenner described his method of vaccination against smallpox and during the intervening years no great improvement has been made in the production of the vaccine until the recent work of Goodpasture and Buddingh of Vanderbilt University. Their work has resulted in the preparation of the virus from cultivation of chick embryo membranes. Fresh eggs are placed in a poultry incubator for a period of 12 days as for ordinary incubation. Naturally only fertile eggs with live embryos are used for the production of the vaccine and the infertile eggs are discarded. A small square is then cut through the shell of the egg down to the fetal membranes. Through this opening the membranes are inoculated under aseptic precautions with a virus of smallpox. The egg is then

reincubated for 72 hours and the virus so produced is removed and studied for sterility and potency. It is then diluted 50% with glycerine and is ready for use. The advantages are: a uniform virulence of the vaccine is maintained, the vaccination scars are smaller, the reaction is more superficial, less local as well as systemic reaction, no regional adenopathy, and above all else there is no sore arm. The product has withstood every test, even the test of field study, without the production of any complications or sequellae.

A quantity of this vaccine was kindly sent to me by Drs. Goodpasture and Buddingh, which I used in my private practice with the following results:

14 children vaccinated; 10 successful, 4 unsuccessful. No fever in any case at any time. No sore arms in any case at any time. No local adenitis in any case at any time. No complications in any case.

WHOOPING COUGH

After three years of intensive use and close study in my private work I am thoroughly convinced that the Sauer vaccine against whooping cough is practical. I have yet to see a case of whooping cough develop following its use provided the four months required to develop the immunity had elapsed. From the start I began to use the vaccine in three months old babies in the same dosage that I gave to older children. No harm that I have been able to detect has followed in these young infants. Reactions have either been absent or very mild and never extend into the next day. In my experience all the reactions following Sauer vaccine, put together, have not amounted to the reaction that has followed a single injection of scarlet fever toxin. For the past two years I have routinely recommended whooping cough vaccine just as I have diphtheria toxoid. As time elapses Dr. Sauer is learning by experience, observation and statistics more and more about the duration of this immunity. He now recommends the administration of 10 to 12 c.c. to all children over three years of age, rather than the usual 8 c.c. dose.

Dr. Sauer has recently reported that in vaccinated cases, who had been knowingly exposed to the disease after immunization, 85% had not developed the disease. This report represents an analysis of 72 physicians from 24 different states.

In 1935 in our State, there were 299 deaths from whooping cough; 49 more from measles, diphtheria and scarlet fever combined.

CONCLUSION

"Personally, I believe that inoculation against typhoid, diphtheria and smallpox should be compulsory by legislative enactment since the schools are supported by State funds. There is no excuse in this enlightened era that we should have the typhoid and diphtheria incidence in this State or any other State that we are now having. I am further of the personal

opinion that any person who has reached the age of maturity and contracts either disease, diphtheria, typhoid or smallpox without ever having been immunized should constitute a misdemeanor and punishable by fine or imprisonment. And further I am of the opinion that parents or guardians should be held legally responsible for the inoculation of their children or minors, and the neglect of so doing without sufficient cause should be guilty of misdemeanor, or fine or imprisonment. This is a free country and we may insist on personal rights and privileges, but when personal rights and privileges reach out and become dangerous to others, then that personal right or privilege should be controlled. It is time that we as a group, should recognize and appreciate that there is an interwoven interest throughout the body politic that should be conserved and protected."—*C. V. Reynolds, M.D.*

DISCUSSION

CHAIRMAN: The discussion of this paper will be opened by Dr. J. W. Williams, of Asheville. I won't call him "Health Officer," but "Health Commissioner."

DR. J. W. WILLIAMS (Asheville): Twice since this meeting opened with prayer yesterday have I had two prayers of mine answered. One was to hear a superintendent of schools cry, "Come over and help us," and a practicing physician say, "If a man will not take protection he should be made to."

Dr. Kutcher is a real student of medicine, alert, willing to be shown and then work things out for himself. Every item of his paper denotes not only study but experience with item mentioned. Not knowing exactly which items he was to emphasize I am trying to hit the high places as a health officer and recall to you the fact that he is a practitioner.

In his paper he mentions the fact mumps and chicken pox are two diseases children can afford to have. We health officers can not pass them so lightly as we are called on to referee the contest of better diagnosis between physicians or subsequent epidemic of smallpox in the community in the case of chicken pox and in that of mumps we sometimes see the older patient with feet tied to the bed post and a prayer on his lips, "Oh Lord, leave me a man."

He leaves tuberculosis immunization to the Frenchmen and as health officer I am willing. Two years after Dr. McCain informs me it is safe, I may try it, maybe.

Tetanus—like every physician I am afraid to advise against the use on antitoxin, but as to the two doses of toxoid and third to come after exposure is with the physician in charge, remembering there is such a thing as test for sensitization and blood other than the horse's in some antitoxin.

Hydrophobia treatments when patient is bitten, but I do believe some physicians are over-zealous, and not for the fee involved when the prospective patient has only handled the animal and there are no abrasions less

than ten hours old. I might mention in passing I hate our twenty-one treatments and if there are fewer and smaller doses the State should furnish them.

Typhoid fever is our old standby, but the Doctor mentions doses according to age and not weight of the child. I see no reason to wait for vacation to get protection. There are many carriers among the public and in these days of depression even in well-sewered cities sometimes great numbers have water supply cut off, the pit privy discarded and even the slop jar thrown away and what is there for the community but vaccination.

Diphtheria is disappearing and I trust we will find out just how to prevent it before it leaves completely. First it was toxin antitoxin, three doses, then five, then the toxoid two doses, the alum precipitated one dose, 1 c.c., then divide it, and lastly, 1 c.c. and in three weeks 2. If practicing, I would use the Schick test in four months, but as health officer, nothing doing. I have 95 per cent of them any how, why worry?

Polio. It's going to take such men as Doctor Kutscher to work this problem out for me; especially Dr. Kutscher, because he is willing to work at it intelligently. When they tell me whatever they are using is killed and it works, then I may invite my ignorant, indigent clientele to come unto me.

Measles and convalescent serum are yet within the practicing physician's province, as he states. Good for a while and certainly deserving of our coöperation in securing potent serum for his use in his private and charity patients.

Smallpox. I know he bears down on this and I have read of Goodfeather's technique, but if cowpox prevents smallpox and cowpox does not kill, why monkey with an unborn Plymouth Rock. While the calf's pussy belly may be dirty it seems there is chance for the incubated egg handled so often. Again the bovine virus is furnished by the State and tetanus is generally furnished by the bunion plaster use as a shield. I am wishing Dr. Kutscher well in his methods and perhaps getting smaller takes than with the army pressure method it will run the applicants where they belong, in the hands of the practicing physician.

Whooping Cough. As late a report as January, 1936, by Kenrick and Eldering states the most notable reports the use of the vaccine as prophylactic measures are those of Madsen and Sauer. Madsen reported 1833 vaccinated and 25% did not contract the disease while only 2% of controls escaped the dose used, 22,000. Sauer with a dose of 70 to 80,000 three months before exposure claims only 10% came down, *but* he quotes R. Smith as saying, "One is certainly justified in using the vaccine in an attempt to provide immunity, but one must be honest with himself and with the patient in acknowledging that proof of the efficacy is not had at present." As physician and parent I would not hesitate in using it because it is a horrible disease and causes more deaths than measles, diphtheria and scarlet fever combined, but as a health officer I wonder what effect

a failure will have on my public. Regarding typhoid, diphtheria, and smallpox, we have no hesitancy in advising.

Scarlet fever vaccine we both forget, but admire the physician whc uses the antitoxin in his cases for cure and keeps down complications.

DISCUSSION

CHAIRMAN: This paper is open now for general discussion. It will be my pleasure to have it discussed freely.

DR. HUDSON: Just two or three phases of this paper I would like to mention. The first is the question of smallpox vaccine. Dr. Kutscher has told you of the vaccine as worked out by Vanderbilt University. During the last year at the last meeting of the American Public Health Association, we had a paper presented coming from the Rockefeller Institute on vaccine of a similar nature produced in the Rockefeller Institute by Dr. Rivers. I had quite a number of negro children and children in similar financial condition in the schools, and secured a quantity of this vaccine, after communicating with the Virginia State Epidemiologist, who had used it on some seven hundred children, and I used it on some of those children, because it seemed to me that we had nothing to lose. The reaction, according to Dr. Rivers and others who used it, was much less severe than with the ordinary smallpox vaccine. There was practically no scar and it did seem to me that it opened up quite a field for the general practitioner, and especially the specialist who has calls for children to be vaccinated when they are small. So I started using this vaccine, after discussing it with a child specialist. I used it on some four hundred children. We did have some reactions from this vaccine. It may not be quite the same culture. Of course, this is a culture vaccine. To some we first gave the Schick test. I used it the same as the ordinary vaccine which you secure from the State Health Department. A few of the children had a red, swollen area, with perhaps a temperature of 99 to 99½. A few of the children have small scars, perhaps less than one-half the size of the smallest scar you get with the ordinary vaccine. A few have scars larger than that. Occasionally there would be a child with a temperature of 102 or 103; perhaps one in a hundred will have a reaction of that type. But the reactions are nothing like as severe as with ordinary vaccine. Loss of time in school was negligible. There was school after school where they would have 25 or 30 children who had not been vaccinated before who would come to school, they would give them this vaccine, and have perhaps one out of a grade lose one or two days.

I think there are one or two questions that we have yet to determine in regard to this vaccine. First, does it give as good protection as the ordinary smallpox vaccine. It has been tested out by Rivers and his associates and by others and they believe that it does give as much protection as the ordinary vaccine. Yet the tests have not been extensive enough for us to be certain about it. The protection seems to be good. You can

inoculate a child who has had ordinary smallpox vaccine with this vaccine and you have a puffed-up area just the same as you do with other vaccine. So we believe it probably gives as much protection as the ordinary vaccine. If so, we feel that it is probably the vaccine that physicians will be using in the future.

In regard to alum precipitate toxoid, there has necessarily been a little note of disappointment with some investigations carried on by the Illinois State Board of Health. It is a little doubtful whether this one dose treatment gives protection for as long as we would like. There has been quite a loss of immunity where they have tested out the immunity. The loss has been rather rapid in connection with that, so that there has been a little question about it. I myself feel that one dose or possibly two doses as has been indicated by alum precipitate toxoid is certainly justified in connection with any immunization of any child. It should be used, of course, the earlier the better. Every child should be taken to a physician when it is six months old and given immunization treatment; from four to six months for the Schick test is the ideal method. Last year in Greensboro there were eleven cases of diphtheria where we ordinarily have 80 to 100 cases. Of those eleven, one was the case of a little baby eight months old, and this baby did not have a physician early enough, or it was not recognized early enough for antitoxin to cure it; and we had one death.

In connection with immunization work, we must try to get little children immunized before they are a year old. Otherwise, by immunizing only older children, we merely increase our death rate by increasing our cases of laryngeal diphtheria. We want every child in the community to be immunized, and at the present time we are sending letters to every mother of a six or seven or eight months old child telling her to take her child to her physician and get it immunized. We believe we can get 75%. Fifty per cent was the number we had down some time ago. I believe we must get a much higher percentage of our children immunized against diphtheria if we are to produce perfect results: elimination of deaths from diphtheria in the community.

In regard to measles serum. I used measles serum in 1928. The Health Department, with a committee of physicians working with us, who select the patients to come in and who assist in taking the serum, has been able to offer to the physician serums for immunization of children, small children, under four years of age. We have been able to secure enough serum from girls 12 and 15 and children 10 and 12 to apparently immunize most of the small children who are exposed. During the last eight years, since 1928, we have had one death from measles in a child under 4 years of age. We know it is a practical proposition for physicians, with the aid of a small laboratory, to secure the serum and to use it on children in a way possible to eliminate the deaths of those small children. During that time we have had something like 4800 cases in Greensboro reported.

CHAIRMAN: We hope someone else will discuss this paper; particularly some of the pediatricians. I see some of them here.

DR. ERWIN: I want to ask a question. Sometimes we are confronted with the proposition of giving all these at one time: diphtheria and whooping cough and measles immunization. I wish he would tell me what he thinks of trying to give these at the same time.

CHAIRMAN: I will ask Dr. Kutscher to close.

DR. KUTSCHER: I appreciate the discussion. And in answer to Dr. Hudson's remarks: time alone will tell whether this new type of serum is efficacious in many respects. As to the new type of vaccine, smallpox vaccine, literature has contained some reports in regard to loss of immunizing value, but every once in a while something crops out and we have to have time to know whether it is true. I do think that the idea that a negative Schick means protection for life is a mistake. I think we ought to re-Schick periodically; just how many years between, I don't know. With the experience I have had the past winter, I rather think it is a good idea to bring all patients back and have them re-Schicked.

In regard to Dr. Erwin's question: I don't know when to give these things. . . My own practice is to take care of a child from birth on through, and the third month I recommend whooping cough vaccine. The seventh month I give diphtheria protection, and any time in the winter months, preferably under a year of age, I give smallpox vaccine. I don't advocate smallpox vaccine early. In the first year, preferably in the winter months, I give this treatment. The reactions are less severe in the winter months.

DR. ————: What about typhoid?

DR. KUTSCHER: Five years.

DR. ————: Why wait?

DR. KUTSCHER: I believe a child has as severe reaction as an adult, and I believe you can protect a child living in the city. If a child lives in the city, I believe that is early enough. If he is away for the week-end, he is running a risk; but I think it is much better to wait. I don't know why, but I feel that way. I am immunizing a child eleven months old that is going to Europe; gave the second typhoid dose this morning. I usually wait until he is four or five years old and then recommend it.

CHAIRMAN: The next paper will be by Dr. H. W. Knight, of Bostic, on "A Sensible Health Program for Rural Regions." Dr. Knight.

A SENSIBLE HEALTH PROGRAM FOR RURAL REGIONS

By H. W. KNIGHT, M.D., Capt. I.M.S. Ret., Bostic, N. C.

In considering a sensible health program for rural regions, it is necessary to review data found in the United States Census of Agriculture for 1925, which pertains to North Carolina. We observe that 49% of the farms are occupied by renters; that one-third of the tenants work farms

of less than 20 acres; while one-third of the tenants work farms of 20 to 40 acres. The average reported income was $553.00, while the expenditure in working the farm was $155.00, leaving only $398.00 a year or $33.00 a month for all living expenses. Similar figures were given in "Frontier Nursing Service," survey of 373 sq. mi. in Kentucky, where the average yearly income of a rural population of 10,097 was only $143.00. It is, therefore, evident that it is impossible for these economic groups of the population to better their physical condition or to protect themselves from disease by sanitary measures. It is further shown in North Carolina that one-third of the 49% of farms are tenanted by the same renter only for a period of one year, one-fourth of the 49% of farms are tenanted by the same renter only from two to four years, while one-fifth of the renters remain for five years or over.

There has been a reduction in number of rural doctors to such an extent that, in my county, there are only 50% of the practitioners of former years. This may be attributed to the advanced cost of living and the reduced rural population. A successful health program in a rural region depends on a restoration of the country doctor. The welfare worker, visiting nurse, midwife or school teacher cannot supplant the country doctor or bring about such changes as will improve the living conditions. It is believed that the appointment of the rural practitioner as a Field Health Officer on a part-time salary, his selection being based on the recommendation of the County Medical Society, would be an inducement for medical men to return to rural practice and thus furnish the State Health Department with much needed coöperation of skilled men. Between a private practice and the public health work, there would be adequate income to prove an inducement for the return to country practice, thus assisting in the solution of the public health problem in rural regions.

The rural people with small income, who live at a great distance from the doctor, find it expensive and difficult to provide adequate medical care for the sick. A scheme was operated in India which lessened the burden on the people and would meet rural needs. A series of simply constructed and equipped quarters, in close proximity to the rural family doctor, could be constructed; where the family could care for the patient, furnishing bedding, food, fuel, and light, thus transferring the home to the Medical Camp. It would thus be possible to make more frequent visits to the sick at a smaller cost, allowing the family sufficient, besides, to pay for the camp charges. While the Medical Camp would be under the charge of the Field Health Officer, any recognized physician would be permitted to attend a case there.

Problems have developed since the organization of the public health department which have materially altered the spread of communicable diseases; viz: (1) The reduction of the rural population and the number of rural physicians; (2) the establishment of rural central schools to which children are segregated from 10 miles away, riding in closed vehicles, and

(3) the advent of the automobile by which carriers of communicable diseases are conveyed many miles for week-end visits. Thus by crowded sleeping conditions, by using common dishes for food and drink and association in close contact, these carriers transfer infectious diseases from cities and other areas or states to a rural community. There was less of a health problem in rural regions during the days of "the little red schoolhouse," "the horse and buggy days," and the time of the country doctor, even though the rural population has decreased in the past 30 years.

Now communicable diseases may rapidly be conveyed from adjoining states or cities to remote points where several cases may develop before a physician is summoned. A school-child may scatter a disease in many directions without the parents having the slightest idea that the disease was present in a mild form. When a disease appears unrecognized in a square-mile area, it soon will be recognized over 100 square miles, through the medium of the central school.

An educational program or reporting of cases fails to control disease occurrence in rural regions because the people live under quite different conditions than in urban communities. Also where epidemics were confined to one township twenty-five years ago, now cases simultaneously occur in several townships and in some very inaccessible places.

In the past, the educational establishment confined itself to mental development until it became aware of the requirement of physical training as well. However, they fail to observe the weak link in their health program for we are familiar with the large number of rural central schools in North Carolina, of modern construction, which have unsanitary privies and polluted water supplies. Cases of venereal diseases have been traced to these privies and the danger from enteric diseases surpass that from the little red school privy. The teaching of sanitation and health in schools where unsanitary and unhealthy conditions exist is most inconsistent. It is unjust for compulsory school attendance laws to be placed upon the statute books when the health of the child is endangered by unsanitary surroundings at school.

In a health program, legislation is of paramount importance. Laws should require the State Department of Education to construct sanitary lavatories and safe water supplies which will meet with the approval of the Sanitary Engineer of the State Board of Health.

At present there is no law fixing the responsibility for unsanitary conditions in Rural Central Schools or empowering the State Board of Health to take action in the interest of public health as may be done with hotels, restaurants and other public buildings.

The environmental diseases forming a health program in rural regions, include those caused by flies, polluted soil and water, defective housing conditions and also from the use of a common dipper and water-bucket, both at school and at home. The custom prevails in rural regions, where water is derived from springs and wells, of drinking from the bucket which

is afterwards lowered into the well for the family supply. A dipper floats in a bucket which is used by both sick and healthy for drinking purposes. It is even carried to the bed of the fever patient. The practice seems to have been in vogue since the early settlers grew gourds from which dippers were made for the spring. Those isolated pioneers lived to a ripe old age, therefore, their grand-children retain the customs of their forebears. Customs remain so constant that, even though they are instructed concerning the dangers, they lapse into the old familiar way. There seems but one effective way by which to overcome such custom problems and that is through the insistence by the family doctor who should be the Field Health Officer that at times when sickness exists, individual drinking cups be used. The school teacher, public health nurse or welfare worker cannot produce changes in customs detrimental to health since they lack the influence exerted by the family doctor, especially during sickness.

Very little if any consideration is given to the possibility of water pollution from surface and sub-surface drainage. The quantity available is the concern of the land-owner and the palatability is the concern of the tenant. It is quite certain that water exposed to pollution and a source of danger escapes the attention of both property owners and tenants. The rural practitioner is in position to observe the water supply as easily as looking at the patient's tongue but he is without authority to cause such improvements as will render the water safe for human consumption. Within a short period of time, the rural family doctor could become familiar with the water supply problems in his area. The practice of inspecting the well or spring at the time of visiting the sick would soon make the populace water minded. It must be remembered, however, that only the property owner is in position to correct the defects in water supply and out buildings and all the needed improvements must be secured by requiring him to act.

Even though vaccination reduces the incidence of typhoid, still many other enteric diseases are conveyed from excrement to human, menacing the health. While it is known that the septic tank proves a safeguard against diseases, still all the education in schools and all the public health propaganda will not erect a sanitary privy in a graded school or on a rented farm.

Most rented farms have very poor housing accommodations either for comfort or health and they are so constructed that it is impossible to properly renovate them after communicable diseases or free them from vermin. Floors and side walls are defective and roofs leak affording very little protection against inclement weather. The floor space is insufficient to accommodate the number of occupants and thus gradually reducing the resistance to disease, interfering with the development of children and reducing the efficiency of the adults. Many of these old houses are located remote from the highway being inaccessible for the doctor except by walking for a mile or more. In certain seasons, these houses become

inaccessible, causing enforced neglect in time of sickness, thus increasing the death rate and becoming a public health problem. Tenants in rural regions should be protected by legislation in all matters pertaining to health and well-being.

Apparently North Carolina tenants may grow a very great variety of food for the winter, but they have little or no storage accommodations provided for preserving what they may produce. Many resort to preserving in jars, but in the winter months vegetables and jars of preserved garden food freeze and persons become sick from eating thereof. The land owner should be required to construct a cellar for meat, vegetables and preserved food as part of the housing program. In order to protect the populace from food dangers, it is necessary for personal contact over a considerable period of time in order to guide the people in selection, preservation and preparation of food for consumption. The Field Health Officer should work out such a program of advice as will be applicable to the peculiar local conditions encountered in the rural region in which he labors.

It is apparent that sanitary and housing improvements in rural regions can only be secured by a statute requiring the land owner to secure a permit from the health department, before renting property, accepting the property as conforming to regulations and as being safe for occupancy. If the tenants are protected in health maintenance by housing and sanitary requirements, the property owners are quite certain to live under equally safe conditions.

Considerable interest has been directed to deaths from child-birth. The subject has received my careful attention for many years with respect to rural regions and I am persuaded to believe that while the doctor is reported to attend more cases that die than does the midwife, still the fault seems to revert to the midwife who first attended the case. There are a few reasons why deaths may follow child-birth; viz.: faulty judgment and inability to make a diagnosis, uncleanly surroundings and attention, and meddlesome interference by midwives. In rural regions, no person should be licensed to practice midwifery without the sanction and recommendation of the local physicians who are the only ones in position to know the character of the work and the qualifications of the woman. The midwife should be under the observation of the Field Health Officer, who would be expected to report their unfitness to continue as licensed midwives. It is quite evident that, under the present system, there is little control of the work of midwives since the doctor is called to assume the responsibility.

The program suggested for rural regions requires legislation of a character necessary to meet the peculiar needs of the region. It requires an adaptation of the present organization so that there will be an effective and economic service rendered the public touching every phase of medical need. With these objects in view, we may summarize "A Sensible Health Program for Rural Regions":

LEGISLATIVE

1. Compulsory housing laws for rural rentable property.

2. Compulsory sanitary laws for rural rentable property.

3. A law requiring proper access to the highway on rural rentable property.

4. A law requiring the provision of such sanitary arrangements in central schools as will meet the approval of the State Board of Health of North Carolina.

5. Authorization for part-time employment of rural doctors to function as Field Health Officers on recommendation of the County Medical Society. Also the authorization of the construction of Rural Medical Camps by the State.

ORGANIZATION

1. The State Health Department and the County Health Officer should function much as at present.

2. The Field Health Officer would be a rural practitioner in the area where he is licensed to practice receiving his part time appointment from the State Health Department on recommendation of the County Medical Society. His services will be in conjunction with his practice as suggested elsewhere. His part-time remuneration will be paid through the State Health Department.

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DISCUSSION

CHAIRMAN: The discussion of this paper was supposed to be opened by Dr. Hathcock. I received a wire from Dr. Hathcock this morning informing me that he could not be present. Of course, I had to find somebody to take Dr. Hathcock's place. No one cares to open a discussion if he hasn't had an opportunity to consider the subject under discussion, but Dr. Sisk, with headquarters at Waynesville, was good enough to agree to open this discussion. Dr. Sisk.

DR. SISK: Public health work is a specialty, and requires, in my opinion, a person naturally born to fulfill the functions of a health officer. I agree with Dr. Knight, in principle. However, the application of methods, as suggested by Dr. Knight, I think is possibly subject to debate.

The Bible says that man cannot serve two masters. I have had sufficient experience in attempting to do public health work in a location where I was expected and required to do private practice until I am thoroughly convinced that it is an impossibility for a physician to do both a good job of preventing disease and preventive medicine, and at the same time practice medicine. Dr. Knight's suggestions of local physicians in rural communities being part-time health officers is very similar to a practice in certain rural areas of Canada. I understand that it works very satisfactorily in Canada. However, in North Carolina, I question very much the feasibility of mixing prevention of disease, or the practices engaged in by public health workers, and the curative practice of medicine. I realize that there is a sentiment among the private physicians that the public health field is infringing upon the just rights of the private practice of medicine. This question should be definitely stated, and the worker in public health should be required to stay on his own ground.

I feel that if Dr. Knight's idea of field health officers, or part-time health officers, were stationed in different parts of the county, that very little public health work would be done, because their primary interest is in the practice of medicine. The records show that 15% of our population is receiving hospitalization, which includes the upper bracket of wealthy people and the poor people. The poor people are getting hospitalization at public expense, and the wealthy are able to finance it. I believe the solution of this question is the hospitalization for everybody at public expense, and the medical care of the poor at public expense, done by the private physician, the assigning of the divisions of the county into districts and giving the medical care of paupers distributed among the private physicians, paid at public expense, leaving the great middle class of people free to pay the physician, select the physician of their choice and be in position to pay him, because they would not have to spend all their resources for hospitalization.

I don't believe that the two, prevention of disease and the practice of medicine, can be mixed and be done by the same individual, with any great degree of satisfaction.

CHAIRMAN: Dr. Knight's paper is open for general discussion.

DR. HARDIN: Dr. Knight brought out one thought there that I think we perhaps should all be considering. The first thing to emphasize is the low income of a large group of our tenant population, which constitutes perhaps 49% of the farmers. We all know that no family can live adequately on any such income as that and pay for medical expenses and provide sanitary conveniences at their homes. We who have been in public health work for years too well know that these conveniences as a rule are not provided by the property owners. Therefore, the tenant does not have the benefit of them, and a considerable percentage of our typhoid fever, dysentery and other communicable diseases are transmitted as a result of contaminated water and insanitary privies and no screens. Malaria is included in that group, and these things result from the fact that such conveniences are not provided by landlords. Only a few days ago I took 50 blood slides on one of our largest plantations where there are quite a number of tenant homes, and none of them, as I recall, provided with sanitary privy, or any kind of privy, and no screens, and those blood slides went in to Washington and came back showing 51.1 positive. . . Not a screened home on that plantation that I know of; no other conveniences. They have driven, shallow wells; and you know that very often wells like that become contaminated with colon bacilli by typhoid infection from surface water.

I don't know what the solution of the problem is, but it has been going on ever since I have been in the State—for twenty years—and there has not been any considerable improvement, so far as I can see. Most landlords have got an alibi when you mention this proposition to them. Nine out of ten will tell you that, in the first place, if they go to the expense of screening the tenants' home that they will simply tear the screens out; children will tear the doors off, leave them open, and if they do fix them up decently it won't be long before they are torn up and if he builds a sanitary privy they will either tear it up and burn it or won't use it, and there is some truth in that. I will be fair enough to say there are two sides to the argument. On the other hand, I don't see how you can ever hope to meet the situation unless you make a beginning. Frankly, I have been in tenement homes in New York City, and worked in them, all the way from the lower end of the island up to 180th street, and I have been in some tenant homes in our State that are far worse than most of the tenements I saw up there, so far as the rudiments of sanitation go. They simply don't have them.

Now, I think what the Doctor has suggested here—we may feel at the present time that it is rather visionary, this question of legislation to compel landowners to provide sanitary conveniences for the tenant homes. On the other hand, I believe most of us will live to see it. It is bound to come. Who would have thought 20 years ago that any of us would live to see reformation of the tenement system in the larger cities—projects

wiping out block after block of tenement homes and constructing modern homes, decent and well-lighted and sanitary, for that class of people. Yet we have lived to see that come to pass; and I think this other thing will. But I believe that we should all keep it before the public as much as possible. It is our duty as Health Officers to let the public know that these conditions do exist and keep hammering after this thing and emphasizing the fact of the low economic status of the tenant and the lack of the rudiments of sanitation being largely responsible for the high death rate and the fact that this high death rate can be prevented in the great majority of cases if these conditions are remedied.

CHAIRMAN: Is there further discussion of Dr. Knight's paper?

DR. B.————: I think the crux of the matter of Dr. Knight's paper is that Dr. Knight is a missionary at heart and by training and still looks upon life with a missionary view of giving himself to his people. Dr. Symington is more or less the same way. They have worked in India and Africa and other countries, and I feel that if men of that type should be helped and subsidized by missionary societies who are sending people to China, and are spending and have been spending millions on the Japanese who are just as able to take care of themselves as we are, would put such men as that in our rural districts to teach these people ways of sanitation, teach them to want better living conditions and to want to practice better health habits, that we would get some results and get them rapidly. But putting part-time health officers into that sort of work is not the public health game. It is against the conception of practical public health in this State, and therefore I don't think it is practical at this time.

CHAIRMAN: Is there any further discussion of this paper?

DR. SYMINGTON: I want to thank Dr. Knight for his valuable paper. Three of us were being driven yesterday by a friend here out to a dairy to see the dairy; and the doctor who has just spoken and Captain Knight and myself were discussing these very problems that we have been discussing here. On such a subject we could talk an hour and yet feel we were not beginning to discuss the question. Of course, I am in a county where there are a great many poor people. I was in the next county to Dr. Sisk for a while—we were next door neighbors—and we both understand each other, probably as no other two health officers understand each other in North Carolina; and we see a tremendous amount of poverty. These poor people can't get a doctor. What is to be done? Now, are you going to shut the door in their faces when they come and ask what you are going to do? In my opinion, it is an economic question, and what is at the root of this matter is the distribution of wealth, and as long as you have the two extremes we are going to have this very serious problem to face. Dr. Sisk met this problem to a great extent in his little book, and he is advocating the system which is in existence in Great Britain where the poor, to a certain income, are treated by government; that is, the private practi-

tioners are paid to treat these poor people. They call their own doctor and they make their own choice, and a fee is paid to treat that poor patient. The doctor also has a choice. He can choose his family. He can say, I don't want to treat that family. A certain family is very difficult to please. They call him in the middle of the night for nothing. It works both ways. That is one way of solving this question.

I could tell you of case after case where I have gone out into families that could not get the services of a doctor, and it is not my job, not my job at all. I recently treated two young men who were very ill with typhoid. They went to a private practitioner. "Where is my fee?" he said. "I don't have any money; no money at all to spend on doctors or even medicine." "All right, call another doctor." They tried several doctors and they would not go. Well, I went. I had to act, as I have done a thousand times. I tried to get them into a hospital; couldn't afford it; and they didn't want typhoid cases in the hospital. I had them on my hands for six months. I could go into the cause of that. What was it? Bad sanitation. Here was an open well and a bucket; and here was a place which had no toilet at all; just a roof there belonging to the well, and there was the toilet. That was the sanitary arrangement for that farm. Those people all worked all year and got nothing, practically, for their labor. No money to spend on doctors. I supplied them with medicine. Now, that is the situation.

Now, it is time for the Government to say, these poor people will be doctored, and time for the Government to say that the private practitioner is the man to doctor them, and pay the private practitioner. Then the public health officers will be able to attend to their own duties after that. Until that time comes, what are we going to do? It is impinging on the private practitioner. On the other hand, I would like to get out of impinging on the private practitioner. I have been trying to for the last eight years, but up to now I have not been able to get out of it.

CHAIRMAN: Is there any further discussion of this paper?

DR. MORRIS: North Carolina can't reach the man that is getting a million and a half or a million dollars, either. But I want to give you an experience we had in Granville County last year, to show you that North Carolina can do something to stop, at least in part, the spread of typhoid fever. During the depression, farms changed hands. They went into the hands of men who had gathered up enough money to buy them for a song. There are some landowners in my county that own ten thousand acres of land, since the depression. They have anywhere from three to thirty or more tenants. Every one of those tenants is unprotected in his water supply and in the disposal of excreta; every one of them. In a recent paper it was suggested that the eating establishments had to have sanitary conditions because of the public. Well, that was a fair-sized public in one man's tenant system; and no protection whatever. He has his money

invested in land and he wants returns, and he is going to expend just as little as he can on those tenants; not only in sanitation but in everything that they require.

There ought at least to be protection of those tenants, because in one place last year a man had a tenant that occupied a place that had been occupied before, I know for twenty years, because I know the situation. This was a poor, ignorant family of eight. They didn't believe in inoculation against typhoid fever. They had no toilet. They had a spring that was down under their house, and between the spring and the house there were barns. They had no place for the disposal of excreta except to hide behind those barns between the house and spring. They had been there three years without typhoid fever, but they had somebody come and dose the barns down there. Somebody came there and visited them that was a carrier, and dosed that hill, and it washed down into the water. We were persuaded that it was the water, because we hunted very faithfully for carriers and couldn't find them, and I began to try to prevent any further use of that water. They were ignorant people. They had no other source of water, but I couldn't persuade them. I told them to boil it; but they were too ignorant to believe there was any reason for that. They didn't boil it, and the whole eight had typhoid fever; eight in the family. There were two other tenants within sight there whose children mixed with their children and drank out of the same spring. Three cases occurred in one of those tenants' houses and one in the more distant one, with the family sick during the harvesting of tobacco. He worked two days, drank their water, ate at their table, came down with it and came to his home where the same conditions obtained, and they had three cases there. Now, you see how the thing goes, for lack of compelling a man to do the right thing by his fellow man. We ought to have compulsion where we can't persuade. We couldn't persuade that man to build those facilities, but they ought to have been there.

Chairman: Gentlemen, we have other papers to come, and if anybody has anything else to say, and can say it briefly, we will be glad to hear from him. Now, if there is no further discussion, I will ask Dr. Knight to close.

Dr. Knight: I wasn't talking in my paper about the treatment of the tenant. That is an altogether different subject. I was talking about the health situation. I reached this conclusion: that if I should ask the Health Department to travel over some roads I have to travel over, they would want another job. Furthermore, their time is not sufficient. When I go around in my practice I see conditions here and there, and I think, how can I get them changed? I can't get them changed unless I have some connection that will turn the trick.

Now, if it comes to the matter of the mentality of the medical profession, I don't consider the mentality or special training of the health

officer, the amount of special training he gets over that of a general practitioner, is such as to make the general practitioner incompetent to carry on that class of work that he would be required to carry on—with all due deference to the specialist along that line.

The Rockefeller Institute is paying people to do hookworm work in this State, and at the same time you can hardly run across the case of a child but what you run across hookworm. We have got to have the rural population re-established as an essential and economic part of our commonwealth. You can't ignore him. You can't expect, if a man is forced to exist, under certain economic conditions, as one of the 49% of the population, you can't expect, if he has got to have his family subjected to all those diseases that they are subjected to at the present day, that they will not feel keenly aware of the social problem. You have got socialism to think about. What are you going to do? Are you going to have medical practice become State medical practice? That is another thing. Unless something is done now on the part of the medical profession, then the thing will go over into State medicine. You have seen welfare work taken away from the church. . . Not brains enough to tell whether people in your community need help. . . So it is necessary for persons that do labor in a certain community to be intimately mixing with those people in such way as no health officer in the State or County or United States can do. You have got to mix enough to know what the local conditions are. I thank you.

Chairman: There are two more papers on the program, and one more hour. I think I will just have to say we will divide those two papers, each one into thirty minutes. It certainly has been a satisfaction to have so much discussion of the papers that have been read. But from now on I hope those who discuss papers will do so as briefly as they can. The next paper on the program is by the State Health Officer, or Commissioner—in order to get in practice—Dr. Carl V. Reynolds, who will read a paper on "Poliomyelitis in North Carolina in 1935." Dr. Reynolds.

POLIOMYELITIS IN NORTH CAROLINA IN 1935

By Carl V. Reynolds, M.D., and J. C. Knox, M.D.,

State Health Officer; and Director, Division of Epidemiology, North Carolina State Board of Health

North Carolina had much publicity last year because of its poliomyelitis epidemic. Inasmuch as this epidemic was one of the few ever described in a latitude so far south, it was not only of newspaper interest but also of scientific interest.

North Carolina is about 650 miles in length from its coastal boundary to its western mountainous boundary. The epidemic of poliomyelitis was

confined largely to the east central section, about 200 miles from the coast and 300 miles from the mountains. Considering the length of the State, our coastal and mountainous sections were as far removed from the center of the epidemic as though it had occurred at some distant point, e.g., Washington, D. C., or possibly Savannah, Ga.

In studying our outbreak of poliomyelitis it may be interesting to observe that North Carolina lies in about the same latitude as southern California, approximately 36 degrees north. The longitude is between 75 and 90 degrees west. From May through October we have a mean temperature of 60.06 degrees, and a mean rainfall of 27.57 inches. From November through April we have a mean temperature of 47.45 degrees and a mean rainfall of 21.90 inches. Eastern North Carolina has a mean temperature of 62.1 degrees and a mean rainfall of 4 inches; central North Carolina a mean temperature of 60.2 degrees and a mean rainfall of 3.99 inches; western North Carolina a mean temperature of 54.5 degrees and a mean rainfall of 4.46 inches. The only other recorded epidemic of poliomyelitis in this latitude comparable in extent to that in North Carolina last summer occurred in Southern California in 1934.

The average number of cases of poliomyelitis for the past five years has been approximately 73 cases per year. Our peak year, prior to 1935, was 1929 in which we had 133 cases reported. For the year 1935, 675 cases of poliomyelitis were reported to the State Board of Health, with 67 deaths. The attack rate per 100,000 for the year was 21.3; the death rate was 10 per cent. Reviewing the records of poliomyelitis in North Carolina for the past ten years, we find that the highest incidence occurred in August with an average of about 18 cases.

In the pre-epidemic period, January through May 15th, 1935, 39 cases and 11 deaths were reported. The epidemic appeared in the last half of May with 59 cases reported for those two weeks. In analyzing the 675 reported cases for last year, according to the *date of onset* of each illness, we find the following monthly distribution: January 6, February 2, March 6, April 2, May 83, June 232, July 207, August 57, September 36, October 18, November 20, December 6. It will be seen that the peak of the epidemic, *by onset,* occurred in June. Due to delayed reporting, particularly early in the epidemic, the peak of *reported* cases was not reached until July during which month 229 cases were reported.

An analysis of the 675 cases reported in 1935 shows the following age distribution: 8 per cent were under 1 year of age, 43 per cent were 1 to 4 years, 27 per cent were 5 to 9 years, 9 per cent were 10 to 14 years, 5 per cent were 15 to 19 years, 2 per cent were 20 to 24 years, 2 per cent were 25 to 34 years, and 3 per cent were 35 years and over, (unknown age: under 1 per cent). The age distribution is noticeably greater in the 5 to 9 year group than in the past five years.

Of the 675 cases reported in 1935, 364 or 54 per cent were males; 311 or 46 per cent were females; 519 or 77 per cent were white; 135 or 20 per cent were Negroes; 17 or 2 per cent were Indians; and 4 were unknown as to race. Seventy-one per cent were rural; 29 per cent were urban. The term "rural" applies to towns of less than 2,500 population. The attack rate per 100,000 among whites was 23.1; among Negroes 14.7; among Indians 102.0. The population of North Carolina is 70 per cent white, 29½ per cent Negroes, ½ of 1 per cent Indian.

A further analysis of the 675 reported cases shows that there were 14 instances during the year in which two cases occurred in the same family. Three instances had onset of illness on the same day as the original case; three instances had onset at one day interval; three instances had onset with two days interval; one instance had onset with four days interval; one instance had onset at 6 days interval; two instances had onset with 8 days interval; and 1 instance had onset with 13 days interval.

During the epidemic in 1935 a case investigation form was sent to each physician reporting a case of poliomyelitis, one form for each case reported. There were 181 of these questionnaire forms returned. From these 181 the following information was obtained: 142 cases had spinal type of paralysis with 1 death; 14 cases had bulbar type of paralysis with 9 deaths; 6 had mixed types (bulbar-spinal) paralysis with 2 deaths; and 19 cases were non-paralytic.

Of the 100 counties in North Carolina 84 reported poliomyelitis during 1935. Durham County, in the north central section, had the highest attack rate in the State for the year: 86.3 per 100,000 population. Johnston County, in the east central section, was second highest for the year with an attack rate per 100,000 of 85.03. Fifty-two counties in North Carolina had an attack rate of 10 or higher per 100,000 population. The mean average attack rate for the entire State for 14 years has been 1.9 per 100,000. Durham County reported the highest number of cases for the year, a total of 58. Wake County, adjoining Durham, reported 55 cases for the year; Johnston County, adjoining Wake, reported third highest number during the year: 49 cases. If there was any radial spread from Raleigh (which we may consider as having been the center of our epidemic) it was in a northerly and northwesterly direction. The counties just north of Wake County border on Virginia.

The control policies adopted by the North Carolina State Board of Health during the 1935 epidemic are summarized as follows:

Immediately upon the appearance of an abnormal incidence of this disease, county and city health officers in North Carolina were informed by letter of the control policies of the State Board of Health.

1. Attendance at public gatherings, irrespective of nature, was strongly discouraged, especially for children.

2. Summer camps were advised not to admit patrons from affected areas.

3. Summer camps were advised not to permit unrestricted visiting by their patrons.

4. The Board of Health, by press, radio and correspondence, warned against treatment by "quacks" and the use of untried medical "cures."

5. The Board of Health advocated the use of prophylactic vaccines *only* in controlled studies.

6. The Board furnished to each physician reporting one or more cases of poliomyelitis a copy of "Practical Suggestions on Poliomyelitis," a digest prepared by a Special Committee on Poliomyelitis for use in connection with the Poliomyelitis Scientific Exhibit at the Milwaukee Session 1933, of the American Medical Association. It was hoped that this pamphlet would be helpful to those physicians who were seeing poliomyelitis in their practice for the first time or after an interval of many years. It was felt that this was a service that the Board could distinctly render, and the comment received from various physicians of the State was favorable.

7. The Board also furnished to physicians, for each case reported, a questionnaire form to be filled in and returned. To date 181 of these have been returned and are analyzed elsewhere in this paper.

8. The Board rendered consultant diagnostic service to any physician requesting it.

9. The Board advised that all suspicious cases of poliomyelitis be treated as poliomyelitis until definite diagnosis was made.

Since the State Board of Health is State-supported it was felt that any information on this epidemic collected by the Board was public property and, therefore, factual information was made available at all times.

The poliomyelitis vaccines manufactured by Kolmer and Brodie were used in North Carolina during the epidemic. The Brodie vaccine was used in control studies; the Kolmer vaccine was used by private physicians.

CONCLUSIONS

During the epidemic of 1935 observation led the Board to conclude that:

1. A daily bulletin, in which facts are given, inspires confidence, secures coöperation and dispels fear.

2. Early diagnosis and specialized care are the best means of preventing permanent paralysis.

3. The best means of prevention is in avoiding contacts.

4. So far, nothing has been learned from the vaccination of the 300 children in the City of Greensboro with the Park-Brodie poliomyelitis vaccine. No cases of poliomyelitis have developed in either the control or the vaccinated groups.

5. This is also true of the Kolmer poliomyelitis vaccine, no complete records being available. Of this vaccine 3,327 c.c. was distributed by Dr. Kolmer to North Carolina physicians; the number of persons inoculated is not known.

6. In the experiment with the Park-Brodie vaccine, local abscesses occurred in 6 per cent of cases; 12 per cent developed nodules at the site of intradermal inoculation; 12 per cent developed medium size indurations.

7. A check of the field experiment, by laboratory immunity tests on both the vaccinated and the unvaccinated children, would be of considerable value in determining the efficacy of the vaccine. This check is already being made.

8. One in 4,700 developed the disease. Assuming that the vaccine is 100 per cent effective, is it a wise public health procedure to use it when the attack rate is so low?

9. Assuming that the vaccine is effective, would not the reactions, abscesses, nodules, indurations prevent its general use?

10. Assuming that the vaccine is effective, would not the incidence of the disease decry its general use?

11. Assuming, again, that the vaccine is effective, would not the potential danger of its producing paralysis decry its use?

12. If public health officials were to advocate a vaccine whose value had not been demonstrated, it would reflect itself in the loss of public confidence in those vaccines whose value is definitely known.

We must know the past to appreciate the present and prepare for the future.

CHAIRMAN: This paper is to be discussed under two heads. We have only a very short while for the discussion, however. The first person to discuss this paper is Dr. John T. Saunders, of Asheville, who will discuss it from the orthopedist's standpoint. Dr. Saunders.

DR. SAUNDERS: In this very brief discussion of Dr. Reynolds' paper I just want to bring to your attention a few simple measures we may use in handling these cases after they occur. As brought out, you realize the panic we had throughout the State last summer when we had this epidemic. Those of us who have gone into the homes know that the panic in the home is even greater, and that whatever we can do should be done, and it is deplorable what little we can do to overcome what the disease has done.

I will not go into the pathology of the disease. You are all familiar with that. You know what happens in the spinal cord. You are familiar with the three stages of the disease. First, the stage of acute symptoms when the child is quite ill and irritable and has a great deal of muscle soreness and pain and paralysis. This first stage usually lasts six weeks, longer or less. The second main division we may for our convenience call the con-

valescent stage, when all the soreness is out of the muscles and children and adults are clinically well but the paralysis is there, and that stage usually lasts up to a period we will arbitrarily call two years; and the third stage is the residual stage of paralysis. That is where the orthopedist's work usually comes in; but to prevent deformity we sometimes encroach upon the earlier stages of this disease. And it is surprising how soon the little deformity will occur in this condition. I have seen it as early as one week following paralysis. At that stage we can do a great deal. I firmly believe we should have splints on these children as soon as possible after onset; that is, within four or five days. The splint not only makes it easier to take care of the children but they are more comfortable and react much better.

I have no figures for you except one that I would like to give you, and that is that a family always wants to know what are the chances of this child recovering; and from the figures we have we can say that about 25 per cent of those paralyzed get approximately full recovery, and the remaining with partial paralysis ranges from 50 per cent to as high as 75 per cent, depending upon the death-rate which, fortunately, in our epidemic last year, was only 10 per cent.

In the acute stage we can give some protection to muscles. If the arms are involved, hold the arms in this position (indicating). During the acute stage we should keep the child warm and see to proper feeding. There is no specific treatment we know of. A firm bed is a great help. In the second stage, when they are over their muscle soreness and acute illness, it is very important to keep in mind two things; one is that they should have rest, and, as a famous orthopedic surgeon said, more rest, and then more rest. That is, we should not overdo anything. A great many men working in this field say if their own children were involved, they would put them to bed for a period of one year, and do nothing else, except to keep them at rest. It is extremely important to avoid fatigue, and to use very easy exercises that are not conducive to fatigue. Now the whole period between the end of the acute symptoms and the so-called residual stage is a very critical one, and these children should not be loaded down with heavy braces. They should be taken care of as easily as possible and not add to their strained or weakened muscles by using heavy braces. We should try to protect the muscles from stretching. The muscle that is completely relaxed during this period has a good chance of recovery, but if it is stretched the chances are much less, and if you will pardon me just a minute, there is one simple illustration or analogy some of us used to tell the parents what we are trying to do. Parents think we are doing almost nothing and want to know about the disease so we tell them the nerve cell in the spinal cord is like a battery, that the nerve is like a wire and the muscle itself is like a lamp, and if the battery is killed outright, the lamp will never light; but if the battery recovers, the lamp will light if it is not broken in the interim. We tell them we are trying to keep the lamp in good

condition. If the nerve does recover, it will furnish the power and the lamp, or muscle, will recover. Numerous operative procedures are at our command to increase function in the residual stage, provided deformity is present, or provided the joints are unstable due to being out of control. We are all familiar with most of the things that are done from this point.

CHAIRMAN: We are running overtime, and on the last paper may I ask you to remain a little after five o'clock? I am sure all of you have enjoyed the discussions, and I hate to limit them but I must do it. We will now hear from Dr. Ward, who will discuss this paper from the pediatrician's standpoint. Dr. Ward, of Asheville.

DR. WARD: I would like to compliment both the essayist and Dr. Saunders on the paper and on the discussion, and I only hope that those of you living in other counties than Buncombe have as good an orthopedic surgeon as we have in Dr. Saunders.

Now, I won't go into the diagnosis of the disease except to say that the important thing from the standpoint of the pediatrician, as well as from the standpoint of preventive medicine, is to make an early diagnosis. First of all, we should suspect the disease. An infant or young child who becomes paralyzed usually has so-called infantile paralysis. It may be caused by other conditions, but much less frequently. We should carefully test the muscles and find out whether he is paralyzed. They usually get weakness of muscles before paralysis, and they usually have a considerable amount of pain, are irritable, sleep poorly, cry when handled. After paralysis occurs, anybody can make diagnosis. A spinal tap will often assist in making early diagnosis.

Now, having made diagnosis, the next question is, what are we going to do about it? First of all, the case should be reported immediately and quarantined. The next duty of the pediatrician is to see that the child is made as comfortable as possible. Mild sedatives are sometimes sufficient, but sometimes opiates are required. And then I think the duty of the pediatrician next is to have an orthopedic surgeon see that child, if possible, because it has been demonstrated time and time again that orthopedic treatment, begun early enough, will result in a return of muscle function in 50 per cent more cases than would occur under other treatment. By putting the limbs at rest and in position, it insures greater functional activity later on, and makes the child much more comfortable. And you can use less medicine to insure comfort.

As to the vaccine as a preventive: we had the pleasure of hearing Dr. Kolmer read his paper. He is an outstanding serologist and is a very attractive and plausible speaker. However, after the paper was over, we had to reach the old Scotch verdict—not proven. He seemed to take the stand, if no one had proved the vaccine was not good, it was good. But as Dr. Root brought out in his paper, the incidence of the disease is very low, and if you are going to get paralysis after use of this Kolmer vaccine, why use it? Kolmer claims that cases that developed paralysis

after the use of the vaccine all developed it within the incubation period of the disease; but he admitted that two children developed paralysis after the use of his vaccine, the only two cases in the community. That was in Pennsylvania. He could not explain that and could not laugh it off. That is a fact.

Dr. Root said the disease follows the routes of travel, and probably it does in a great many instances. However, we can't explain why the disease spread from North Carolina into Virginia, but in comparatively few instances into Maryland and Delaware, and Pennsylvania and New York. The disease was first reported in 1780, and we had the first epidemic in this country in Louisiana in 1843, but we are a long way from knowing just how the disease spreads; what routes it follows, etc.

Just a word in regard to the preventive side of it; from the standpoint of quarantine, etc. Some people may say, why be so careful to isolate these children? We don't know much about the disease, anyhow; it seems to spread, anyway. So why do it? We could use the same argument about measles, etc. Yet we quarantine that disease, and rightly so. And we feel very strongly we should use the same methods as we do in regard to other virus diseases. New York in 1917 had an epidemic. There were 93 institutions housing 28,000 children. These places were all quarantined—isolated. And not one single case developed. These houses were scattered in different sections of the city. Some of the children were certainly not so well taken care of, from a hygienic standpoint, as other children in the city of New York. Yet there was a terrific incidence of the disease in New York City and none in those institutions. That to my mind is an argument that cannot very well be explained away. Therefore, I think it is the duty of the physician and health officer to insist that this disease be treated like other communicable diseases and quarantined and the children kept to themselves as much as possible.

Dr. Hudson: . . . in Greensboro. Dr. Reynolds and some speakers have referred to it. We had considerable difficulty in having these tests made, in the first place. And considerable difficulty was encountered in the handling of the serum. However, we had final reports recently. The work has been summarized. You will find in Public Health Report No. 1750, I believe it is, discussion by Dr. Gillam and Dr. Comstock of methods whilch we used in Greensboro, and Dr. Reynolds has told you something of the results. They began using this vaccine first in California. They inoculated 1600 children out there before they came to us with it. They did not, however, work out certain phases of the problem.

On non-vaccinated people we had 11 tests made. Six of those people were protected before and 5 of them were protected afterwards. Then we had five tests of people from whom we secured blood both before and after inoculation. Of the non-vaccinated group 6 had protection first and 5 afterwards. On the second test we had the same result. Of the vaccinated individuals, we had 6 individuals, and 5 of them were not immune at the

time the Brodie vaccine was given. One was immune at that time. Afterwards, two months, we secured new specimens of blood from the same individuals, and of the 5 individuals not protected 4 were protected at that time and one was not protected.

CHAIRMAN: Dr. Reynolds, will you close the discussion?

DR. REYNOLDS: If I get started, I am hard to stop, so I won't start. There are many points of interest, but I won't take time.

CHAIRMAN: The time is short, and of course everybody likes to play fair in every kind of game. We are glad to have these discussions, not only from the health officers but from the private practitioner as well.

I have to apologize to the next essayist, a slight apology, because I changed the title of his paper just slightly. He was good enough to say, however, that it didn't make much difference, even if I did. The title as he submitted it was, "The Impingement of Public Health with Private Practice," and I thought to make it a little milder I would say, "Is Public Health Impinging on Private Practice?" I said to him, however, that I would change it to the original if he would like me to do so. He expressed the desire that it stay like he had put it, but stated the change would not make a great deal of difference. The Secretary could not change the title before the program went to press, and therefore it is down here as it was changed, a little different from the way Dr. Northington at first had it. So you will hear the paper discussed, and not exactly like it is in the program. Dr. Northington.

DR. NORTHINGTON: I feel in justice to myself that I should say I am confining myself to the manuscript, to show it has not been changed.

THE IMPINGEMENT OF PUBLIC HEALTH ACTIVITIES ON PRIVATE PRACTICE

By JAS. M. NORTHINGTON, M.D., Charlotte, N. C.

In many states of the Union public health officers and private practitioners have come into active if not acrimonious conflict. No such conflict has taken place in North Carolina and this happy state of affairs is due, to a great degree, to the fact that, taken by and large, our health officials have been, and are, well balanced men, with a strong sense of justice, who have borne it constantly in mind that, whoever is State, County or City health officer, it is the doctor in private practice who has always done, does now, and must continue to do, the bulk of the work of preventive medicine.

My choice of a title startled some of my friends into thinking an attack on public health work was to be made. Possibly this misconception came from confusion with the word, infringement, from *frangere*, to break. It is said that impinge comes from an old Latin word meaning to agree, and I use it in the sense of coming in contact with and going along with.

It has fallen to my lot to function as quarantine and vaccination officer, as water analyst, as supervisor of sewage disposal and mosquito and fly destroyer; and I have even been engaged by a town to bury a victim of smallpox. So it would seem possible for me to see both sides of problems which arise from private practitioner and health officers coming in contact with and going along with each other.

Apparently it is inevitable that every man will think his own job more important than it is; so a health officer is not blameworthy for thinking of his proper field as larger than it really is, and no more is a private practitioner to be blamed for feeling aggrieved when it appears that his field is being invaded by public health officials. Blaming is futile anyhow. When one encroaches on your rights, it's idle to waste, in blaming him, the time and energy which could be properly and effectively used in making him stop it. Remember the verdict of the backwoods magistrate: "Not guilty; now quit doin' it an' everything'll be all right."

It may be true that to expect to be given credit for a worthy act is little different from expecting payment in coin. However that may be, in the present stage of more or less human development it rather riles us to see others claim or be given credit for what we have done. And just as the garden variety of doctor can count on being lauded twice before he is buried, and twice only—in his graduation and in his funeral—so he can count on getting a limited, reflected, subordinate glory from his expenditure of energy in keeping folks from getting sick.

Several months back the bulletin of a State health board carried a glowing account of how the doctors of a certain community had, under the leadership of a representative of the Board, immunized all the school children free, regardless of parents' ability to pay. I commented at the time that the doctors should be ashamed of themselves; that many of those children would be taken in new cars to comfortable summer resorts, while many of the doctors' families stayed, perforce, at home and the doctors rattled over the hot hills in ancient Fords. For the well-to-do to give to the poor is blessed; but the Italians have a proverb "When the poor give to the rich the Devil laughs."

The public-health authorities are in position to head off any such unjust demand on doctors who must get a living, if at all, from fees paid by those who are able to pay.

A few years ago (and it may happen every year for all I know), to meet the requirements of a public health ordinance, in at least one of our North Carolina cities, each doctor who declined to examine free any girl applying to him who wished to use a public swimming pool was placed in the position of appearing ungenerous and lacking in public spirit.

To my certain knowledge the fathers of many of those girls had dollars to the pennies at the command of the doctors whose services they were

filching. A little foresight on the part of the health authorities would have arranged the stage for these Naiad's going to their own doctors by appointment and paying for his services instead of being parceled out to those doctors who would allow themselves to be imposed on.

We can give thanks that baby shows are on the decline. However, within this present year I saw a lot of babies that had been assembled by a benevolent order being "examined" and blanks being filled out amid noise and confusion which made it impossible to determine the answers to the questions printed on the blanks. So far as I know the public health authorities had nothing to do with this; but it seems that such bringing together from hither and yon of scores of naked babies should be under control of those charged with disease prevention.

Frequently we hear doctors blamed for not immunizing all their patients against the diseases they would be likely to contract and for which we have immunizing agents. That many of us are not as persistently zealous in this cause as we should be is admitted: but it is well to remember that doctors have no power to compel their patients to accept inoculations; that inoculations are neither sure to prevent disease nor entirely devoid of danger; and that a doctor who gives honest answers to questions on these points is apt to give fewer inoculations than is the doctor who represents them as absolutely certain and safe. The recklessness of telling any patient that any surgical procedure is safe is illustrated by a case in the papers within the past week, in which it was alleged a wart was removed from a man's abdominal wall with the assurance that it was a very trivial matter, entirely safe, and that he would be all right in a day or two; but in a few days the patient was dead.

My own answer to the question, "Is it safe?" is, "There is nothing absolutely safe but death." I go on to say that it is safer to have it done than not to have it done.

We don't know as much about preventive or curative medicine as we pretend. My own lukewarmness to periodic examinations is because of this, and a few other things. As it now stands it is doubtful if the good accomplished by the detection of early remediable disease would outweigh the evil from doctors' interpreting as pathological what is really only abnormal and from many patients developing health obsessions. Besides pretty nearly all remediable disease conditions announce themselves.

The combined knowledge of public health officials and private practitioners is as necessary for working out public health programs as their combined action is necessary for putting these programs into execution.

There is a field, though, in which public health officials can, alone, accomplish wonders for the health of the people. Indeed the help of the private doctors would be a hindrance in this field.

To Dr. Thomas F. Wood the State Board of Health of North Carolina owes its origin. Dr. Wood said in his presidential address to the Medical

Society of the State in 1882 that the functions of this Board "necessarily include the protection of the people against the malpractice of unauthorized medical men." The health officers of the State and its subdivisions are looked upon as the sentries on guard over the people's health. The people think these carefully-chosen sentries know what will be injurious to their health, that they are alert to detect injurious influences and that they will be swift to raise an alarm when the people's health is threatened. Therefore, when imposters of many kinds come among us blatantly advertising their ability to cure cancer, high-blood pressure, diabetes, Bright's disease—any and everything—by some secret expensive process; silence of those chosen and paid to "protect the people against the malpractice of unauthorized medical men" is certainly reasonable evidence that these quacks can do all they profess to be able to do. If a County Medical Society prosecute, the answer is ready: The paid protector of the public health has not raised his voice, it is obvious that these doctors are actuated by envy and greed. The same applies to the State Board of Medical Examiners for the Board is made up of private practitioners. By every law of reason, of right and expediency, the health officials in North Carolina are the proper persons to lead in persistently enforcing the Medical Practice Act; and it would be appropriate for them to exert themselves in the enforcement of the speed regulations, for all that prevents unnecessary death is within their province. If every doctor would do his utmost to have enacted a proper law requiring that every automotive vehicle operated on the roads or streets of North Carolina be equipped with a governor set at the legal speed limit, it would mean the saving of a world of profitless work to most of us and of the lives of a good many of us. Doctors have to travel the roads at all hours of day and night.

We rarely hear now, as it was common to hear ten and fifteen years ago, that in a short time the average life span will be a hundred or a hundred-and-twenty years. I never took any stock in such wild tales, and all along I have taken the position that little prolongation of life beyond the scriptural four-score could be expected; and that such prolongation, could it come to pass, would be calamitous indeed. In a lecture to the New York Academy of Medicine last December, Dr. Alexis Carrel used the plain if not blunt words: "Civilized countries are encumbered with those who should be dead." I would not adopt his words, but my reasoning goes along with his that the success of our battle against death has almost suppressed natural selection through which the strong and intelligent persisted to develop the great races. Yet not one year has been added to the life-span of the individual.

Dr. Carrel's subject is "The Mystery of Death" and because of the peculiar concern of doctors with death, I give a concluding poetic yet truthful sentence of his which is full of meaning for us all: "In general, death is like the end of a dull, mediocre, sad day; sometimes the peace

of sunset in the mountains; or the rest of the hero after the battle; exceptionally the immersion of the soul in the splendor of God."

We often hear it argued that, by giving their services in examining and operating campaigns, doctors in private practice eventually profit by reason of the educational value of the work done. There is such a thing as giving out so many free samples as to automatically cut off sales, as many a drug firm has learned to its sorrow. My own opinion is that the free, or almost-free, school clinic has about served its time. Some public health orators tell us we private practitioners could make more than half our living preventing diseases if we only would. I would like to see a demonstration.

The argument that since the State attempts to educate children it should provide that they be examined to learn if they are healthy enough to take an education is specious, unless we want to accept the whole program of the Socialist party. It is obvious that food, shelter and clothing are necessities for *every* child; while the medical examination will disclose important remediable defects in only a *few;* so, if the State assumes the obligation of bringing the child to the class-room in good physical condition, it must assume the obligation of sheltering, feeding and clothing him; and if it must do these things for the school-child, it must do them for those too young to go to school and for the parents; for how can a child put his mind on his studies when he knows his little brothers and sisters and his parents have not these necessities of life?

It is a striking fact that the great majority of those who proclaim that we doctors, ourselves, must make a radical change in our way of rendering medical service, or some outside body is going to make the change, are those who would be injured in no way if this occurred. There is no evidence to support this statement: there is a world of evidence on the other side. Doctors in private practice have better than average sense and they make better than average use of it; and they are the ones who would be most immediately injured by the taking over of Medicine by the State. Somehow, I just can't work up much alarm when salaried doctors tell us that, unless we voluntarily surrender a great part of our field of endeavor and a great part of our living to salaried medicine, some mysterious agency is going to take over the whole of the field. Well-meaning as a good many of these warnings are, I believe they are based mostly on inaccurate observation and unsound reasoning; and I shall continue to put my trust in the opinions of those whose daily and nightly ministrations enable them to learn what the people think and whose concern for their very existence would cause them to take alarm if there were any general sentiment for a radical change in rendering medical care.

Finally, I would love to see the valuable material published now in the *Bulletin of the State Board of Health* reach the people through the daily papers of the State. I do not believe any one thinks that material published in a bulletin gets the same reading or consideration as that appearing in the daily papers, and I would love to see those fine things that are written

and got together by Dr. G. M. Cooper put before the people in the most effectual way. Possibly it might be well to continue the *Bulletin,* printing in smaller numbers to reach some who do not read the daily papers. I am confident the large papers of the State would contribute space to the State Board of Health, as I know some of them do to local health agencies. Through the daily papers, besides such matter as now comes out in the *Bulletin,* statements of the essential facts about cancer, tuberculosis, appendicitis, pellagra, high blood pressure, Bright's disease, diabetes and so on, could be repeated frequently enough to have a tremendous influence in guiding the people aright and in preventing them from being hurtfully influenced by whatever quack propaganda may be conspicuously before the people at the time.

Mr. Chairman, and gentlemen, I believe when these recommendations are carried out the result will be for the good of the Public Health Organizations of the State and of Medicine in the State; and that the greatest good will accrue to those we jointly serve—the people of the State.

DISCUSSION

CHAIRMAN: Dr. Northington's paper was supposed to be discussed by Dr. Newell. Dr. Newell at the last moment found he could not come. I then requested Dr. Carleton, Health Officer of Winston-Salem, to open the discussion, and if he is here, we will be glad to hear from him. Dr. Carleton.

DR. CARLETON: Mr. Chairman, I had the pleasure of seeing this paper this morning, and I have a few notes it will take about two minutes to read.

DR. R. L. CARLETON: *Impinge*—to agree, to go along with. "The doctor in private practice bears the bulk of the work of preventive medicine"—there are not enough health workers to do all the work of preventive medicine if they would; they do not have the intimate contact with families that the general practitioner has; public health means the treatment of the community as a whole anyway—the private doctor, the individual and the family.

The guardian of the public health does not contend that the doctors in private practice should immunize school children against smallpox, or diphtheria, or what-not free of charge, regardless of ability of parents to pay—of course they should be paid for such services in all instances where the parents are able to pay. Health workers do persistently and consistently contend, however, that it is the everlasting duty of all private practitioners to so instruct the families in their care that they understand and will take proper advantage of these measures. And I hear with reassurance that Dr. Northington says to his patients "It is safer to have these things done than not to have them done."

The Italian proverb, "When the poor give to the rich the Devil laughs," makes me think that Mussolini must be getting a whale of a laugh out of having made poor old Haille Selassie give him everything.

I am not quite sure I can go all the way with Dr. Northington in that the paid health workers should bear the brunt of enforcing the "Medical Practice Act" of the State or that it would be appropriate for them to enforce the speed regulations. Circumstances arising out of both of these conditions—those caused by quacks and charlatans and those caused by too much speed and drunken drivers, certainly cause many unnecessary deaths, and of course health officials will always be found helping protect and saving lives—but there will have to be a considerable boosting of health budgets in North Carolina before personnel can be provided in sufficient numbers to take the lead in such matters.

I wish to emphasize Dr. Northington's suggestion that more of the State Health Department's educational material be used in our newspapers. Our papers are the best medium for health education publicity at this time. I would not have the *Bulletin* discontinued or made smaller but much additional good can be done by having the State's papers use more of the *Bulletin's* material.

The keynote of Dr. Northington's paper as I see it lies in his statement that "The combined knowledge of public health officials and private practitioners is necessary for working out public health programs and their combined action is necessary for putting these programs into execution."

CHAIRMAN: I have asked one other doctor to discuss this paper; a man who has done public health work and who is now in private practice. Dr. R. C. Mitchell, of Mt. Airy.

DR. MITCHELL: I will say the few words I have to say from here. I did not read Dr. Northington's paper. For some years I have been charmed by his wisdom and wit which makes us remember it. There are one or two points I might differ from him a little bit on. On most of them I would agree. But all that would be covered in the one thing that I had in mind to say when Dr. Ennett asked me to say a word in discussion of this paper. That came up in discussion of the paper two papers back. The impingement—the going along together of private practice and public health is the question. The private practitioner says, "The public health official is doing work I should do. If I should do it my economic life would be easy." On the other hand, the public health man says, "Here, that private practitioner is charging more than is necessary to charge for service." There is where the question seems to hinge. I heard this debated back and forth when I was with the State Health Department at Raleigh. As a member of the Board of Health in our County, we have had this question debated back and forth.

There is one thing Dr. Ennett will remember when he was there. We had to decide this question: We had a Board of County Commissioners who said, "You must treat the inmates of the jail and of the county home, and if you don't we won't contribute to the health budget." Then we had certain people who were important political people. They would say, "If you don't treat this man we are going to see that you lose your job." The

State Board of Health says, "If you don't carry out certain pre-campaign pledges it will be too bad." So what is the health officer going to do? On the other hand, some doctor says, "The public health officer is treating some of my patients, and they are able to pay." So the upshot of what I have to say is that our Board of Health got together and said: the health officer shall be left free to treat only inmates of county homes and jails, as required by the county commissioners, but shall examine or treat no other patients except as specified in writing, written request from some doctor who desires the service of the health officer.

Well, the doctor is not likely going to refer very many patients to the health officer, and the health officer sometimes has to be courteous to the doctor who is going to do something for him—that is a thing we don't like to do. Now, I should like to say unqualifiedly that I have no sympathy with the idea expressed here this afternoon that it would be possible in rural communities for a doctor to serve as part-time health officer and do private practice of medicine. We are living under a democratic government, established by people who came over here and said, "We are going to establish a country with a democratic government where a man has a right to do as he pleases, so long as he hurts nobody else.". . . I don't say that everybody has all the money that he wants; all of anything that he wants. When any man is living under a government that will permit such insanitary conditions as described by someone here, a lot of us . . . feel rather helpless. We are living under a democratic form of government, but we are also living in a country of politicians who can do anything they want to do, and we have only one weapon against it. And it is a law, any time we want to tell the land owners, "You must make your premises safe for people to live upon." If a man in my automobile is hurt, I have got to pay for it. If a man strikes his toe on a loose step at my house, I have to pay for it. If my property falls down on him I have to pay for it. A man that lives in squalor and disease has a right to do it if he wants to. We live in a country that can do anything it wants to. The health officer should be required to take work to qualify himself, should be properly paid for it and required to plan his work before he does it and then do it, and let the practice go wherever it will, because it never does any good, anyway.

Chairman: This paper is open for general discussion. Anybody who desires may speak on it.

Dr. Knight: If the gentleman thought my paper in which I proposed a rural field health officer meant he was to be a poor doctor, he is very much mistaken. I don't consider that the health officer ought to become a poor doctor unless he is hired to be a poor doctor. What I figured is, there is plenty of work in rural regions for a health officer, for a field health officer to coöperate with the State health officer and the county health officer; that that be joined together. Treating the poor is an absolutely different subject than the subject of private practice of medicine;

two different subjects. If you understood it that way, I think you will find my paper doesn't suggest it.

DR. MITCHELL: I should like to understand. When I referred to treating the poor I was not referring to your paper. I was referirng to the fact that certain county commissioners having more authority than information will require a health officer, trained in public health, to spend his time treating the indigent of the county.

CHAIRMAN: Any further discussion?

DR. HUDSON: Dr. Mitchell gave us quite a little food for thought. I am in thorough sympathy with what he said. I lost all my hair in public health work. I have been a health officer. I know that there is no such thing as a part-time health officer who can get results and practice medicine, at the present time. We might have one or two. I think probably my friend from Bostic could. He will sacrifice himself, his practice, in order to enforce the law. But we are health officers. We have got to enforce the law. Isn't the law coming to this point, that every place in the State, every county, village and city in the State, will require good sanitation for homes. We require some type of sewage disposal, a safe water supply and safe milk supply and food supplies; and when we go to enforce the laws, where would a man be who, for instance, had a patient over here, the best patient he had had for years and years, owned four or five houses, and he said, "I don't want to put sanitation in those houses. The tenants are negroes, they have lived like that for years," and he would just be damned if he would put sanitation in any of those houses for his people to use. Where would the practicing physician be if he should go to that patient? He would get another doctor, and he would lose a good patient. You can't enforce, regardless. It is impossible. He can educate; but it is asking too much of him to ask that he act as health officer. There are certain things he can do. We want his coöperation, want to push more and more on him all the time that we can, and I believe that as time goes by more and more work will be given him; but at the present time you cannot ask the physicians of the State to act as health officers.

CHAIRMAN: The discussion has drifted a little. Dr. Hudson was discussing another paper.

DR. CARR: I do want to refer—as Dr. Northington has gotten in somewhat the same field, I would like to refer to one thing. Something has been said about cutting these big boys—cutting the million dollar salary, helping to finance sick folks who are probably paying one-fourth the State taxes. That is, making these salaried men getting a million dollars tobacco salaries help the poor farmer back yonder when he gets sick. Now, if you expect that to come around from legislative enactment you will be disappointed. You can't do that. It is impossible. I take it for granted that a man that has studied medicine, that he hasn't studied it altogether for the financial consideration, because I believe it is one of the highest professions we have, and that he should study it for the good he

can do to humanity. And those doctors back in the rural sections, and doctors everywhere, should take into consideration that those people are not able to pay very much and they should look after them. It is not a question of public health. It is a question of private practice. When he studied medicine he knew he had to do these things and he ought to take that into consideration, and there ought not to be any conflict whatever between private practitioner and the health officer, because this is a field that belongs to the private practitioner. In the main, I agree entirely with Dr. Northington's paper, but there is one thing I think he is radically wrong in, and that is this: when he said that the time had about come when we should stop examining school children. I think that is the greatest thing in the public health curriculum.

Dr. Northington: I said clinics—operating clinics—surgical clinics.

Dr. Carr: I don't endorse that. But the periodical examination of public school children is one of the greatest things we have in public health. And we want to find out about these repeaters. I do say this: that when they are found that they should be referred over to the family physician and he should treat them. That is the proper place for them, but if they will not treat them, then they belong to the public health clinic.

Dr. Morris: I hate to prolong this discussion, but I have a real reason for getting up. I have impinged on the medical profession in caring for syphilis patients. I come to a patient once in a while that says he can't pay. I treat everyone alike, and I know that he can't. I tell him to get a doctor's order—and I never hear from him any more. To some of them I say, "Did you go to a doctor?" "Yes." The doctor knows that he can't pay and will not treat him. . . And the medical profession is certainly responsible for such condition as that.

Chairman: Is there any further discussion of this very interesting paper? If not, I will ask Dr. Northington to close.

Dr. Northington: The discussion seems to cover everything but cross eyes and bow legs. I would not undertake to refute what my friend here who was brought up in the classics attempts to say about his Latin; but I understood that that definition was made, and I stated it was supposed to be derived, originally—I went back behind "pango" and refreshed my memory on the subject, and I am still convinced that the principal confusion was through the similarity of sound to "infringe." . . . . Almost any dictionary will give several different meanings. I was using it in that particular sense; and surely with no intention of creating any violent impact. I recall a sentence in some of my reading where it was stated that at a certain spot the Japan current impinges on the coast of Eastern Asia. Certainly a mild ocean current could not do anything of any violence, but gently it comes in contact with and follows along. Dr. Mitchell brings up a matter which shows that his mind and mine impinge, because I believe firmly that the only thing we can do with any

efficacy is by education, rather I would say instruction. A lot of people object to our educating them, but don't object to being instructed. They don't have any violent reaction against that; and if we give instruction, and repeated instruction, it is nothing but proper advertising in the interest of health. That is really the burden of my song—repeatedly telling them. It is my firm conviction that a man has a right to go to hell at his own gait, if he is fairly warned and repeatedly warned.

> "Ignorance is the curse of God,
> Knowledge the wings wherewith we fly to Heaven."

CHAIRMAN: This completes our program. Thank you for the full discussion.

Adjournment.

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FOURTEENTH ANNUAL SESSION

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Second Vice-President and Chairman of Bed—Mrs. J. B. Sidbury.....Wilmington
Third Vice-President and Chairman of Loan Fund—Mrs. R. D. McMillan Red Springs
Corresponding Secretary—Mrs. H. L. Brockmann.....High Point
Recording Secretary—Mrs. E. C. Judd.....Raleigh
Treasurer—Mrs. F. R. Taylor.....High Point

COUNCILLORS

First District—Mrs. T. L. Carter.....Gatesville
Second District—Mrs. E. B. Beasley.....Fountain
Third District—Mrs. G. B. Barefoot.....Wilmington
Fourth District—Mrs. C. F. Strosnider.....Goldsboro
Fifth District—Mrs. R. G. Matheson.....Raeford
Sixth District—Mrs. J. S. Hooker.....Chapel Hill
Seventh District—Mrs. F. M. Houser.....Cherryville
Eighth District—Mrs. W. P. Knight.....Greensboro
Ninth District—Mrs. Clyde R. Hedrick.....Lenoir
Tenth District—Mrs. W. A. Brewton.....Enka

PAST PRESIDENTS

1923—(Organizing Chairman)—Mrs. P. P. McCain.....Sanatorium
1924—Mrs. P. P. McCain.....Sanatorium
1925—Mrs. I. W. Faison.....Charlotte
1926—Mrs. J. Howell Way.....Waynesville
1927—Mrs. R. S. McGeachy.....Kinston
1928—Mrs. Benj. J. Lawrence.....Raleigh
1929—Mrs. A. B. Holmes.....Fairmont

1930—Mrs. J. H. Macon ..... Warrenton
1931—Mrs. W. B. Murphy ..... Snow Hill
1932—Mrs. R. S. McGeachy ..... Greenville
1933—Mrs. W. P. Knight ..... Greensboro
1934—Mrs. J. W. Huston ..... Asheville
1935—Mrs. J. Buren Sidbury ..... Wilmington
1936—Mrs. C. P. Eldridge ..... Raleigh

May 1, 1936.

The Board of Managers of the Woman's Auxiliary to the Medical Society of the State of North Carolina held a luncheon meeting at Sanatorium October 16, 1935, as guests of Mrs. P. P. McCain, with the following present: Mrs. Charles Eldridge, Mrs. V. S. Caviness, Mrs. Sidney Smith, Mrs. R. A. Matheson, Jr., Mrs. Alban Papineau, Mrs. C. F. Strosnider, Mrs. W. T. Rainey, Mrs. J. B. Cranmer, Mrs. J. B. Sidbury, Mrs. J. D. Freeman, Mrs. John Hooker, Mrs. I. H. Manning, Mrs. R. F. Taylor, Mrs. R. A. Schoonover, Mrs. J. R. Terry, Mrs. P. A. Yoder, Mrs. R. D. McMillan, Mrs. G. B. Barefoot, Mrs. P. P. McCain, and Mrs. K. B. Pace.

The treasurer reported about $200.00 in bank.

The Southern Medical dues and a stationery bill from Edwards & Broughton were authorized paid.

Mrs. J. B. Sidbury offered a prize to the district which secures the greatest number of paid-up members.

Mrs. P. P. McCain offered a prize to the district securing the greatest amount of money for the Bed Fund.

It was announced that with the appointment of Mrs. Hooker from the sixth and Mrs. Strosnider from the fourth a councillor for each district had been secured.

Mrs. Crammer was appointed to work with Mrs. Sidbury to organize the daughters of doctors to help and aid with the work of the Auxiliary, this organization to be called the Doctors' Daughters Auxiliary.

Mrs. Schoonover, chairman of Loan Fund, reported that two loans of $100.00 each had been made to Miss Whittington of Snow Hill and Miss Mildred Knight. On hand in Loan Fund at this time $545.00, plus the three notes.

It was moved that Mrs. Schoonover and Mrs. Sidbury perfect the resolutions pertaining to the Loan Fund—these resolutions to be submitted at the next board meeting.

Mrs. Rainey, chairman of Bed Fund, was to write each councillor to send in money from her district for Bed.

The President stated that our bed patient, Dr. Johnson, was collecting stamps and urged each member to send stamps to him to add to his collection. Each member present contributed toward buying a stamp collector's magnifying glass for him.

It was moved by Mrs. Taylor and seconded by Mrs. McMillan that we pay the Southern Medical dues $10.00 for our districts rather than five cents per member.

It was moved by Mrs. McCain and seconded by Mrs. Barefoot that we recommend the name of the Southern Medical Woman's Auxiliary be changed to Southern Medical Auxiliary.

Mrs. Sidney Smith, Publicity Chairman, urged that any work done by local Auxiliary should be sent to her by councillors.

Mrs. Yoder urged each councillor to secure subscriptions and renewals to *Hygeia* from each doctor in the district, as this commission would aid us financially.

As there was no further business the meeting adjourned.

—LIDA TAYLOR PACE, *Secretary.*

May 1, 1936.

A meeting of the Board of Managers of the Auxiliary to the Medical Society of the State of North Carolina was called Wednesday morning, May 8th, in the Card Room of Carolina Hotel by the President, Mrs. C. P. Eldridge.

The minutes of the 1934 General Meeting were read and approved by the committee.

It was moved by Mrs. Knight and seconded by Mrs. Ben Lawrence that a "Rules" chairman be appointed.

It was suggested that a Scrap-book chairman be appointed.

Each member present pledged her support to the new President. As there was no other business, the meeting adjourned.

—LIDA TAYLOR PACE, *Secretary.*

MONDAY, MAY 4

4:00 p. m.—Guests of Biltmore Dairy. Cars leave Battery Park Hotel promptly.
7:15 p. m.—Pre-Convention Executive Board Meeting (Roof Lounge).
8:30 p. m.—Informal social evening for all convention guests (Roof Lounge).

TUESDAY, MAY 5

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. Paul H. Ringer, Asheville.
Presentation of President's Jewel by the President-elect, Dr. C. F. Strosnider, Goldsboro.
(Ball Room, Battery Park Hotel).
10:30 a. m.—Pre-Convention Executive Board Meeting (Roof Lounge).
11:00 a. m.—Annual Meeting (Roof Lounge).
2:30 p. m.—Scenic Drive. Cars leave Battery Park Hotel *promptly* at 2:30.
4:30 p. m.—Tea, Biltmore Forest Country Club.
Guests of Mrs. Paul H. Ringer and Mrs. G. Farrar Parker.
9:00 p. m.—President's Reception and Fourteenth Annual Medical Society Ball.
(Ball Room, Battery Park Hotel).

WEDNESDAY, MAY 6

10:00 a. m.—Cars will be available for trips to various points of interest.
Biltmore House—transportation furnished
Tickets $1.18—secured at registration desk

INFORMATION FOR LADIES

1. Register at Battery Park Hotel on arrival and receive badge. $1.00 registration fee for all who do not present 1935-1936 membership card.
2. Wear badge to all functions.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. L. M. Griffith, *Chairman*.....Asheville
Mrs. M. L. Stevens.....Asheville
Mrs. G. Farrar Parker.....Asheville
Mrs. W. A. Brewton.....Enka
Mrs. A. B. Craddock.....Asheville
Mrs. T. R. Huffines.....Asheville
Mrs. J. W. Huston.....Asheville

TUESDAY, MAY 5, 11:00 A. M., ROOF LOUNGE

PROGRAM

MRS. C. P. ELDRIDGE, *President*, Presiding

Call to Order—Mrs. C. P. Eldridge, President.
Prayer—Mrs. H. H. Harrison.
Greetings—Mrs. J. W. Huston, Asheville, N. C.
Response—Mrs. C. F. Strosnider, Goldsboro, N. C.
Greetings from the State Medical Society—Dr. Paul H. Ringer, Pres.
Memorial Service—Mrs. P. P. McCain.

BUSINESS SESSION

MINUTES—Mrs. K. B. Pace, Greenville, N. C.

The Board of Managers of the Auxiliary to the Medical Society of the State of North Carolina held a meeting in the Roof Lounge of the Battery Park Hotel, Asheville, N. C., May 6th.

The following resolutions were recommended for adoption by the members at the general meeting.

(1) That the name, "Woman's Auxiliary to the Medical Society," be changed to "The Auxiliary to the Medical Society."

(2) The Board of Managers at their regular meeting in the fall of 1936 be given authority to adopt the Constitution as it now stands—provided the National Auxiliary adopts theirs.

(3) The two young women who have used the Loan Fund be given the consideration embodied in the Amendment—no interest if note is paid at or before maturity of the note.

(4) That our own Mrs. P. P. McCain, who was the instigator and organizer of our Medical Auxiliary in this city, Asheville, thirteen years

ago and who has worked so faithfully in every phase of the work, be called "Organizing President" of our Auxiliary.

As there was no further business, the Board adjourned to meet with the general meeting of the Auxiliary.

Respectfully submitted,
—LIDA T. PACE, *Recording Secretary.*

The annual meeting of the Auxiliary to the State Medical Society met in the Roof Lounge at the Battery Park Hotel, Asheville, N. C., May 6, at eleven o'clock.

The meeting was opened with prayer by Mrs. H. H. Harrison.

A most sincere greeting was extended by Mrs. J. W. Huston, Asheville, N. C., and responded to by Mrs. C. F. Strosnider.

Greetings were brought from the State Medical Society by Dr. Paul Ringer, President, Asheville.

Very impressive memorial services were held, led by Mrs. P. P. McCain, for our departed members, two in number.

Mrs. L. M. Griffith, Chairman of the Entertainment Committee, invited the ladies to many lovely social functions while in the city.

The reading of the minutes was dispensed with as they were to be read before a special committee.

A most gratifying report was made by Mrs. Fred R. Taylor, Treasurer. Mrs. Taylor was given a rising vote of thanks for her most prompt and efficient work during the year.

The report of the Chairman of Organization, Mrs. J. B. Sidbury, Chairman, was read.

Mrs. W. T. Rainey, Chairman of McCain Bed, gave a report. A letter of appreciation from the Doctor who had recently occupied this bed was read and Mrs. Rainey announced a girl nine years of age was occupying it now.

The report of the Loan Fund, Mrs. R. A. Schoonover, Chairman, was given. The amendments to this Loan Fund were adopted and voted to send a copy to the State President, Dr. Strosnider. After a discussion as to the limited amount to lend a girl, it was moved and seconded that the amendment be changed, "Except by Special Permission of Board of Managers."

Mrs. Roscoe McMillan, Chairman of Public Relations, gave a report.

Mrs. Paul Yoder, *Hygeia* Chairman, gave a report.

Mrs. A. B. Holmes, Chairman of Courtesies Committee, thanked the local Auxiliary for the many lovely courtesies extended the ladies, and extended to the City of Asheville greetings and thanks.

A motion was made that a note be written Mrs. J. B. Sidbury and Mrs. I. H. Manning who were unavoidably detained from the meeting.

Mrs. F. M. Houser of Cherryville was elected as delegate to the American Medical Association.

As there was no other business, the President, Mrs. Eldridge, gave a most helpful and gratifying report of her year's work.

The Nominating Committee, Mrs. C. D. Thomas, Chairman, Mrs. P. A. Yoder, and Mrs. J. W. Huston, made the following report:

Mrs. W. T. Rainey, President-elect.
Mrs. C. P. Eldridge, First Vice-President.
Mrs. J. B. Sidbury, Second Vice-President.
Mrs. R. D. McMillan, Third Vice-President.
....., Corresponding Secretary.
Mrs. E. C. Judd, Recording Secretary.
Mrs. F. R. Taylor, Treasurer.

The new officers were installed by Mrs. P. P. McCain with appropriate ceremony.

The gavel was accepted by the President, Mrs. J. R. Terry, who pledged her loyalty and asked the coöperation of each member.

A Board meeting was called for Tuesday evening, 7:30 o'clock.

As there was no further business, the meeting adjourned.

Respectfully submitted,
—Lida T. Pace, *Recording Secretary.*

TREASURER'S REPORT

Mrs. F. R. Taylor, High Point

Receipts and Disbursements, May 20, 1935, to May 20, 1936

Balance on Deposit May 20, 1935		$291.75
RECEIPTS		
Dues 262 members (1935-1936)	$262.00	
Dues 13 members (1936-1937)	13.00	
		$275.00
McCAIN BED FUNDS		
Contributions to McCain Bed Endowment Fund		
Balance on Deposit, May 20, 1935		$ 51.58
Second District—Mrs. K. B. Pace	$ 2.00	
Third District—Mrs. Ben R. Graham	4.00	
Hygeia Commission	2.50	
Fourth District	5.00	
Sixth District	6.00	
Eighth District	5.00	
Hygeia Commission	20.25	
Gift	4.50	
		$ 49.25

DIVIDENDS

(Dividends to be used for upkeep of Bed)

Fairmont National Bank, 1st dividend, (October 10, 1935)	$ 12.53	
Fayetteville National Bank, 3rd dividend, (October 10, 1935)	5.07	
Fairmont National Bank, 2nd dividend, (January 4, 1936)	10.44	
		$ 28.04
TOTAL		$695.62

DISBURSEMENTS

Dues to American Medical Auxiliary (1935-1936)	$ 65.50	
Dues to Southern Medical Auxiliary (1935-1936)	10.00	
To Edwards and Broughton, for printing	13.00	
To James H. Mathews and Co. for McCain Bed marker	73.00	
To North Carolina Sanatorium bed, May 1, 1935, to March 26, 1936	186.06	
To Mrs. Sidney Smith, for poster	2.35	
TOTAL		$349.91
Balance on Deposit May 26, 1936		$345.71

STUDENT LOAN FUND—DISBURSEMENTS

Loaned to Miss Genevieve Whittington, July 6, 1935	$100.00	
Loaned to Miss Margaret Knight, July 27, 1935	100.00	
TOTAL		$200.00

RECEIPTS

Balance on hand, August 27, 1935		$549.55
From Guilford County Medical Auxiliary, March 6, 1936	$ 12.00	
From Mrs. J. A. Garreu (nee Genevieve Whittington) (Payment on loan) February 24, 1936	200.00	
From Miss Margaret Knight, May 4, 1936, (payment on loan)	100.00	
Interest on money in bank	8.27	
		$320.27
TOTAL		$869.82

BALANCE ON DEPOSIT

(May 26, 1936)

General Fund	$ 56.15	
McCain Bed Fund (upkeep)	176.73	
McCain Endowment Fund (savings)	100.83	
Dues for 1936-1937	13.00	

STUDENT LOAN FUND

Cash on Deposit (savings)	$869.82	
TOTAL BALANCE ON DEPOSIT		$1,216.53

REPORT OF CHAIRMAN OF ORGANIZATION

Mrs J. Buren Sidbury, Wilmington, N. C.

During the past year your Chairman of Organization wrote all the Councillors twice and a few more often. She urged all Councillors in the fall to call district meetings and in the spring she wrote asking for reports on work accomplished. In the fall three answered her letter: this spring, six sent reports. However, the seventh district had no councillor last year and a new one has just been elected for the ninth.

District No. 1—Mrs. T. L. Carter, Gatesville, Councillor

Letters written to all doctors' wives in district, urging them to send dues. This district has a widely scattered population and the few doctors in it live far apart. Almost impossible to get a meeting of the wives. Mrs. Carter asks that another Councillor be appointed.

District No. 2—Mrs. E. B. Beasley, Fountain, Councillor

No report.

District No. 3—Mrs. Graham B. Barefoot, Wilmington, Councillor

A district meeting held last fall when the doctors held theirs. The wives of the Wilmington doctors entertained at a buffet supper at the Y. W. C. A. in honor of the visiting wives. After supper, Mrs. E. S. Bulluck invited everyone to her home for an evening of bridge. There was a good attendance and much interest shown.

District No. 4—Mrs. C. F. Strosnider, Goldsboro, Councillor

In April the Wayne County Auxiliary entertained the wives of the doctors of the Fourth District at a supper at the same hour the doctors had their meeting. After supper and games, the doctors arrived for a social hour. Purpose and work of the Auxiliary explained to them and was well received by them. The Councillor reported many letters written and doctors contacted and twenty towns contacted for membership. Special contribution for the McCain Bed—$5.00. At the time the report was sent in, the membership was 63 with more expected to pay at convention.

District No. 5—Mrs. R. A. Matheson, Raeford, Councillor

One district meeting held at same time doctors held theirs. Well attended. Hoke County wives have joined 100%. Four copies of *Hygeia* sold. Membership list not complete as more are expected to pay at Convention.

District No. 6—Mrs. John S. Hooker, Chapel Hill, Councillor

Several meetings held in different counties. No district meeting reported.

District No. 7—No Councillor last year.

District No. 8—Mrs. W. P. Knight, Greensboro, Councillor

The Eighth District had 42 members at the time report was sent in.

Two District meetings were held. In the fall the wives of the Guilford County doctors entertained the visiting wives from the 8th District. Twelve dollars was contributed to the Student Loan Fund and $5.00 to our McCain Bed. A free-will offering was taken for a disabled doctor and his wife and a shower of groceries and home-made jellies also given this couple. The Councillor expressed her indebtedness to Mrs. R. P. Sykes for the memberships sent in from Randolph County.

District No. 9

Councillor recently appointed. No report.

District No. 10—Mrs. W. A. Brewton, Enka, Councillor

No report.

In the Fourth District Mrs. Strosnider and your Chairman of Organization wish to express their indebtedness and appreciation to Mrs. R. S. McGeachy for her excellent coöperation in sending in dues from Halifax County. Mrs. McGeachy rounded up sixteen members. She is an enthusiastic worker and can always be counted on to advance the work and interests of the Auxiliary in every way.

Two prizes of $5.00 each were offered this year. One is to go to the district sending in the largest donation to the McCain Bed and the other to the district having the largest number of paid members by April 15th. The first is to be applied to the McCain Bed Fund and the second to the McCain Bed Endowment Fund, both to be credited to the districts winning them.

Respectfully submitted,

Willie D. Sidbury (Mrs. J. Buren Sidbury),

First Vice-President, Chairman of Organization, Women's Auxiliary to the Medical Society of the State of North Carolina.

During the past year the McCain Bed has been occupied all of the time. Due to expert management on the part of Dr. McCain we have been able to assist three deserving cases.

Our patient, Dr. Johnson, has been able to do some work in the Sanatorium since November. He deeply appreciates the opportunity given him by the Auxiliary and the members have reason to be proud of their part in this work.

Since November the bed has not been needed by a doctor or any member of a doctor's family, and a very deserving child was placed on it. As financial help was not available for her at that time, the Committee thought it advisable to place her on the McCain Bed. After much perseverance Dr. McCain was able to get other help for her and we were free to care for little Sarah Beam, whose father is dead and whose mother has tuberculosis. She is nine years old and has a chance now to grow into a helpful citizen.

The Bed Fund has been paid to date.

The Chairman of *Hygeia* sent in $22.75 toward the McCain Bed Endowment Fund. If you remember, it was decided to establish such a fund. This shows what can be done if we will coöperate with our *Hygeia* Chairman. Other contributions brought the Fund to over $100.00.

It will interest you to know that our former patient, Dr. Johnson, is now working part time in the Sanatorium, substituting in the absence of one of the regular physicians.

Pay your dues and give some card parties to help this cause, for you really get more "value received" at Sanatorium than anywhere else in North Carolina.

Respectfully submitted,

MRS. W. T. RAINEY,
Chairman of Bed.

REPORT OF CHAIRMAN OF LOAN FUND

We have had no requests for loans since the early summer of 1935. At that time a loan of $100.00 each was made to two young women.

It is with much satisfaction I report both of these notes paid and before their maturity.

The financial report for the Loan Fund will be found in the Treasurer's report.

Respectfully submitted,

MRS. R. A. SCHOONOVER, *Chairman.*

AN ANNOUNCEMENT

Be It Resolved by the Medical Auxiliary of the State of North Carolina.

That, the Medical Auxiliary Loan Fund, already created—

First: Be used for the purpose of making loans to children of North Carolina doctors who could not, except for such loans, finish their college education. Said loan be made for the Junior and Senior scholastic year or for special work.

(a) This Auxiliary, acting through its Executive Board, shall appoint a loan committee of three members and no loan shall be made from this fund unless and until the same has been approved by said loan committee.

(b) The members of said loan committee shall serve for a period of two years each.

(c) The Loan shall be limited to $100.00 a year for two years—to one individual (except by special permission of Board of Managers).

Second: For each loan the borrower shall execute a note to the State Auxiliary, signed by herself, her parents, and two other sureties.

(a) This note shall be due and payable on or before one year from the date of graduation with interest from the maturity of the note at the

rate of 5% per annum, subject to the provision that no interest shall be charged if the note be paid promptly at maturity.

Third: The application of each borrower shall be endorsed by the Auxiliary to the County Medical Society—and the County Medical Society in the County in which the borrower lives or in case there are no local organizations, by two physicians and the wives of two physicians.

Each applicant for a loan shall make a written application, said application shall be retained by the loan committee as a permanent record.

Fourth: The individual who is from time to time Treasurer of the State Medical Auxiliary shall be trustee of this fund and shall make loans when given authority to do so by the Chairman of the Loan Fund Committee.

Fifth: Upon the passage of this amendment, the Secretary shall transmit a copy to the President of the State Medical Society.

Mrs. R. A. Schoonover,
Chairman Student Loan Fund.

REPORT OF CHAIRMAN OF PUBLIC RELATIONS

Madam President and Members:

As Chairman of Public Relations I respectfully submit the following report:

The service of several prominent physicians secured to speak to various Woman's Clubs on Preventive Medicine.

In November a meeting was held in Raleigh for the organization of a State Society for the Assistance of Crippled Children. The Social Security Act passed by the last session of Congress provides approximately $3,000,000 per year for their care and treatment. Mr. Frank Barber of Asheville was elected President of this Society. Your chairman attended this meeting and expressed the willingness and desire of the Woman's Auxiliary to the Medical Society of the State of North Carolina to cooperate and assist in any way possible in this very deserving work.

Upon request some literature pertaining to State Medicine has been secured and distributed.

Several talks have been made and many letters supplying information on various subjects pertaining to work being done by the Woman's Auxiliary.

It is to be hoped that through our various connections we are taking a forward step in making North Carolina health conscious and our aim is to do our part in making it the healthiest and happiest State in the Union.

Respectfully submitted,
Mrs. Roscoe McMillan.

REPORT OF HISTORIAN

I mailed a report of last year's work to the Historian of the Woman's Auxiliary to the American Medical Association and to the Historian of the Woman's Auxiliary to the Southern Medical Association.

I copied the following into our scrap-book:

1. Objects and Aims of the Woman's Auxiliary.
2. Roster of the State Officers for 1933-1934.
3. Mrs. Huston's report of Woman's Auxiliary to the Auxiliary to the Southern Medical Association.
4. The Roster of the State Officers for 1934-1935.
5. Mrs. Sidbury's report to the Woman's Auxiliary to the Southern Medical Association.
6. Copy of Mrs. Sidbury's summary for work done during 1934-1935.
7. Our Code.
8. The report of the Research Committee of the National Organization. Also the bulletin put out by the National Research Committee containing a list of papers available to each member.

Respectfully submitted,

IMOGENE BELLAMY MOORE, *Historian.*

REPORT OF HYGEIA CHAIRMAN

Women's Auxiliary to the Medical Society of the State of North Carolina

Your chairman has written thirty-four state, and two national, letters and cards in interest of *Hygeia.*

She arranged with Dr. R. L. Carlton of the City Health Department of Winston-Salem for a broadcast over WSJS and he used as his subject, "What the Educated Person Should Know About Personal and Public Health," and also discussed how one might be able to secure the magazine *Hygeia,* stating that *Hygeia* was the most dependable source of accurate medical information available to the laity.

She has also arranged for two talks to industrial groups to which *Hygeia* has been made available for a period of three years, the talks to take place in the month of May.

Mrs. James D. Lester, our national chairman, set our quota at the number of paid members in our Auxiliary, and our slogan this year, "Every Member a Subscriber or Responsible for a Subscription." We have fallen far below this goal, however, let us try harder next year.

Your chairman has sent in to *Hygeia,* for the State, fourteen one-year and three three-year subscriptions, a total of twenty-three yearly subscriptions. The commission amounted to twenty-two dollars and twenty-five

cents which was turned over to Mrs. T. W. Rainey, Chairman of Bed Fund, to use as she saw fit, either for regular or endowment bed fund.

Counties sending in subscriptions were New Hanover 1, Robeson 2, Hoke 4, Forsyth 16.

Respectfully submitted,
(Mrs. Paul A.) Evelyn D. Yoder.

PRESIDENT'S REPORT

Mrs. C. P. Eldridge, Raleigh

As President of the Woman's Auxiliary to the Medical Society of the State of North Carolina I will give a summary of work done during the year.

You have heard the reports in detail and I want to thank these people for their splendid reports.

This is the first year that the Councillors' reports have been given in the report of the Chairman of Organization and some of these reports may not be as full as in future years when the Councillors become more accustomed to sending in rather than reading their own reports. We hated to take these reports from the individual councillors but as our time is limited it became necessary to consolidate them into one report. We have a councillor for every district, and some new county organizations have been formed. You also have heard report of our new organization of Doctors' Daughters, which, under the able leadership of Mrs. Cranmer we know will develop into a most helpful organization.

This year we have had two calls for loans from our Student Loan Fund. We hope to increase these calls until all our Fund is in use. Our Chairman and her committee have also completed the resolutions and by-laws for the Fund which you have already heard and discussed.

I know you have all been delighted to hear of the progress made by our guest in the McCain Bed at Sanatorium for the last year and a half and we are proud to have had the privilege of helping in this recovery. We wish for him a successful future. Our present guest, a little girl of 9 years, I know will have the same loyal support that our former guests have always had.

The Treasurer's report is of course incomplete but we are glad to know that all bills are paid and that we have so many paid-up members.

Our *Hygeia* work is on a better basis than ever before, although our subscriptions still fall far short of our quota. The Chairman, however, has worked on her organization and I am sure that her efforts will show results in the years to come. If we could only remember that each subscription or renewal will pay for three days in our McCain Bed, I am sure we would all work harder.

The National Research Committee is establishing a lending library of

articles on our doctors and their work. This year we have most interesting material on Dr. Mary Martin Sloop about her life and work at Crossnore —we would all be interested, I know, in having this paper read at one of our county meetings.

We have had one Board Meeting this year. Due to bad weather and illness the spring meeting was called off. We had a very enthusiastic fall meeting with Mrs. McCain at Sanatorium with quite a large attendance. Mrs. McCain, as always, was a most gracious hostess. Some of the subjects discussed were:

The Organization of Doctors' Daughters, about which you have already heard. Mrs. Cranmer was appointed Chairman.

The Treasurer was instructed to pay our Southern Medical Society dues. We decided we could ill afford not to be members, but we paid on a district rather than county basis. The Board also recommended that the name of Southern Medical Woman's Auxiliary be changed to Southern Medical Auxiliary.

Mrs. Sidbury offered a prize to the district securing the greatest number of paid-up members. Mrs. McCain offered a prize to the district securing the largest amount of money for the McCain Bed Fund. Both of these prizes to go to the McCain Endowment Fund.

In closing I wish to thank my officers, Councillors and Chairmen for the work and coöperation given me—without this help the year's work could not amount to much. I wish also to thank my Advisory Committee for their advice and others in the organization who so willingly accepted responsibilities asked of them.

Respectfully submitted,
(Mrs. C. P.) Lucy C. Eldridge.

REPORT OF NOMINATING COMMITTEE

To the Members of the Women's Auxiliary to the Medical Society of the State of North Carolina:

Your Nominating Committee beg leave to report the following recommendations:

For President-elect—Mrs. W. T. Rainey.....Fayetteville
For First Vice-President—Mrs. C. P. Eldridge.....Raleigh
For Second Vice-President—Mrs. J. B. Sidbury.....Wilmington
For Third Vice-President—Mrs. R. D. McMillan.....Red Springs
For Corresponding Secretary .....
For Recording Secretary—Mrs. E. C. Judd.....Raleigh
For Treasurer—Mrs. F. R. Taylor.....High Point

COUNCILLORS

First District—Mrs. T. L. Carter.....Gatesville
Second District—Mrs. E. B. Beasley.....Fountain

Third District—Mrs. G. B. Barefoot.....Wilmington
Fourth District—Mrs. C. F. Strosnider.....Goldsboro
Fifth District—Mrs. R. G. Matheson.....Raeford
Sixth District—Mrs. J. S. Hooker.....Chapel Hill
Seventh District—Mrs. F. M. Houser.....Cherryville
Eighth District—Mrs. W. P. Knight.....Greensboro
Ninth District—Mrs. Clyde Hedrick.....Lenoir
Tenth District— .....

Respectfully submitted,
Mrs. C. D. Thomas, *Chairman,*
Mrs. P. A. Yoder,
Mrs. J. W. Huston.

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Wyatt, Mrs. A. T.....Lillington
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PROCEEDINGS

Twenty-Sixth Annual Session

OF THE

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

President

Dr. R. S. McGeachy, Weldon

Vice-President

Dr. R. M. Buie, Greensboro

Secretary

Dr. A. H. Elliott, Wilmington

BATTERY PARK HOTEL

ASHEVILLE, NORTH CAROLINA

MAY 5, 1936

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

MONDAY MORNING SESSION

May 5, 1936

The Twenty-Sixth Annual Session of the North Carolina Public Health Association convened at 9:55 o'clock in the Ball Room of the Battery Park Hotel, Asheville, North Carolina, Dr. R. S. McGeachy, President, presiding.

Chairman McGeachy: The Twenty-Sixth Annual meeting of the North Carolina Public Health Association will now come to order.

Dr. John Williams (Asheville): Mr. President and Friends: This is a duty I am just finding out is mine, but I assure you it is a pleasant one. Asheville is always welcoming visitors but very seldom does she welcome the health officers. Representing my craft I assure you that the doors are wide open. We are glad to have you and we hope the meeting will be a success.

Dr. A. H. Elliott (Wilmington): Ladies and Gentlemen: The next thing on our program will be the President's Address, by Dr. McGeachy.

PRESIDENT'S ADDRESS

No one realizes more than I do my short-comings as President of the North Carolina Public Health Association, but, being human, I must admit that I deeply appreciate the honor you conferred on me last May by nominating and electing me to this office, and I will always look back with pride to my year of service.

At the outset I wish to thank those who so readily and willingly accepted Dr. Elliott's invitation to prepare and read papers and thus make it possible for us to present one of the best programs of recent years. I assure each of you that Dr. Elliott and I both greatly appreciate your coöperation, and we both say, "Thank you."

I feel that the best wish I could express for the incoming president would be that Dr. A. H. Elliott be re-elected secretary. To him is due the credit, for he has done practically all the work.

I want it distinctly understood that the suggestions I am about to make and the recommendations set forth are in no way meant as a criticism, or as a reflection on the work and progress of our organization, for I feel and know that it has accomplished great good in the past, and that it has practically just begun its fight for the rights of health and happiness for all the citizens of our great State.

For twenty-six years now the North Carolina Public Health Association has been the organized body of those engaged directly and indirectly

in health work within the borders of our State, and I cannot help but feel that the time has come when it should, to a certain extent, at least, let its influence be felt in the other organizations of the state, whose aims and purposes are, more or less, allied to ours.

At the present time we hear a great deal about maternal and infant mortality, and the recent passage of the Social Security Act has stimulated much interest in the subject; but even before this act was introduced in Congress, such organizations as the National American Legion had taken recognition of the needs of more adequate care and supervision in the field of Maternity and Infancy, and at its National Convention in 1934 adopted a resolution, part of which is as follows: "That, in view of the needless waste of human life caused by the death or permanent injury of mothers in child-birth, depriving children of that maternal care which is the foundation of all child welfare, and in order to promote more adequate provisions for the health of mothers and of children, we pledge the coöperation of the American Legion in the observance of Mother's Day as an opportunity for spreading information on Maternal and Child Care, etc."

I have felt for a long time that much good would result in years to come if we would devote more time, thought and energy towards properly instructing the youths that will in a short while be the home makers and the parents of future generations. To this end, I think it would be well for us to take the lead in forming a strong committee made up of representatives of this organization, of the State Board of Health, the State Medical Society, the State P. T. A., the State Board of Education, and the State T. B. Association, which will make an exhaustive study of the problem, and formulate some system of education in our high schools that will guarantee a more scientific answer than the young girl gave when the class was asked to give three brief reasons why mothers' milk was preferable to cows' milk as a food for infants. Her three reasons were: 1st, "It is cheaper," 2nd, "It is easier to keep over the week-end," and 3rd, "The cats do not turn it over." I honestly feel that, at least, the senior class boys should be given some instruction in what it means to be the head of a household, and some of the responsibilities of fatherhood; and all girls should be taught that motherhood is the greatest privilege, blessing and responsibility that God in His all-wise providence has conferred on any one, and that they should so live and conduct themselves while young as to be able to carry out to the fullest extent the great responsibility God has placed on them. In short, instruct them so to live as to be able to give natural birth to their offspring, and then to be able to nourish them with the greatest single food known to science, viz., *mother's milk.*

Tuberculosis; what a problem! I feel that such organiations as those I have already mentioned should get together and compile some simple literature that could be used in every county in the State, and that we all strive to give the same instruction and advice, and lay special stress on

the best known methods of preventing its spread. Each of you, doubtless, know that the death rate from tuberculosis has been greatly decreased in the last three decades, but, unfortunately, the rate in young people from fifteen to twenty-five, especially that of females, has not decreased in proportion to other ages. If maternal and infant hygiene is sufficiently taught, and young girls are thoroughly instructed in personal hygiene and the best known means of prevention of all forms of sickness, I feel that great good to future generations will result. I know of no better way to disseminate this knowledge than through our high schools and the 4-H Clubs in which girls are instructed in the proper development of Head, Heart, Hands and Health, and I feel that we, as health officers, do not really coöperate in this line of health work as we should. Much more could be said on this subject, but time prevents.

Venereal, or social diseases. In the last issue of the *American Journal of Public Health* there was published an account of how syphilis is being eradicated in Sweden. It revealed that the disease had been greatly reduced through the enforcement of a law that is very similar to one that is supposed to be enforced in our State. I do not believe that these diseases have been given the serious thought they deserve. *The Literary Digest* of April 4th, quoting from "Science Service," gives Dr. Thomas Parran, Jr.'s six-point program as Surgeon-General of the U. S. P. H. S.: "1st, To finish the job of wiping out tuberculosis; 2nd, To wipe out syphilis, the end results of which 'crowd our jails, our poorhouses and our insane asylums'; 3rd, To make available to people everywhere facilities for the proper diagnosis and treatment of cancer; 4th, To reduce the 'disgracefully high' death rates of mothers in child-birth, and babies in the first month of their lives; 5th, To correct the conditions resulting from improper diet; 6th, To restore crippled children to lives of usefulness." *The Digest* adds this: "His special field is syphilis. He is the foremost authority in the country on the public health aspects of this malady. He believes it can be wiped out in a few years if people will only cease thinking of it as an unmentionable disease, and consider it for what it rightly is: a public menace more disastrous than most of the epidemics that make big, black headlines and stir the nation to methods of prevention and control." The only way I know of to control syphilis and the other venereal diseases is to cure, or, at least, render non-infectious all existing cases, and educate the general public as to prevention. Since entering the field of public health, with the exception of a few months, I have conducted anti-syphilitic clinics, and for several months I had the privilege of being in the county in which the Rosenwald and U. S. P. H. S. anti-syphilitic clinic was held, and had the pleasure and privilege of the association and counsel of such men as Drs. Waller, Winger and Clark of the U. S. P. H. S., and through this association I was made to realize very strongly the dangers of syphilis and its importance as a public health menace. Education is a slow but rather sure method of correcting any wrong or defect, and I feel that we should lay more stress in our clinics on the dangers of all forms of venereal dis-

eases, and should instruct in a simple way the general public in the best known means of prevention. I regret very much that there is not available some plainly written, concise literature that could be distributed in every county in the State. Personally, I have always thought that the little pamphlet gotten up by Dr. J. S. Mitchener entitled, "Facts About Venereal Diseases," was a good one, and I would certainly like to see this pamphlet or some one of a similar nature published in large enough quantities to be distributed all over the State. In short, let us see that some form of informative literature be made available and that some agency distribute it in those counties that do not have health departments.

One might write page after page and mention several other diseases concerning which the public should be educated, but I must soon close.

Personally, I feel that there should be a closer affiliation between this Association and the State Board of Health. I feel that a mutual interchange of ideas and a free discussion of matters of public health between those actively engaged in public health work in the field and those in executive offices would be mutually beneficial, and I suggest, if agreeable to both, that the incoming officers meet with the State Board of Health some time between now and the next annual meeting to discuss this matter from all angles, and if they decide that a closer relationship is desirable, that the secretary be instructed to report at our next regular meeting what, in their opinion, is the best method to establish this closer relationship. "United we stand; divided we fall."

Dr. William Allen: Mr. President and members of the Association: I sought this opportunity to address this Society on what activities should be included in a health department, hoping that you may share with me an interest in the study of heredity, and that you may join me in revising and advancing our outlook on what measures seem necessary in the field of preventive medicine at the present time because of the constantly shifting relative importance of the chief causes of death.

What I mean is this: Twenty-five years ago we were busy all summer with typhoid fever, malaria and infectious colitis in children. As soon as school started we had scarlet fever, diphtheria and all the rest of them. All our time then was taken up treating infectious diseases. The constitutional, the chronic, diseases, created very little interest and very little curiosity in those days.

It was in those days that our health departments were formed under the splendid leadership of Dr. Rankin in this State. They were formed around the bacteriological laboratory, whose function of course was to identify the infectious diseases.

Our health departments have developed along the lines on which they were laid down, and unhappily, I think, they have at last fallen under the magic spell of standardization. So that today the specifications of our health departments are so rigid and unresponsive to new conditions that

the major part of the field of public health now lies outside of the activities of our health department.

Where there is no vision, the people perish.

Public health activities consist of those measures adopted by practicing physicians or governmental units through their employees, to prevent sickness and death in the population generally. The field covered by these activities at the present time is largely confined to infectious diseases.

We try to eliminate the pathogens from milk and water. We try to immunize the population against certain diseases. We try to prevent the passage of certain diseases by isolation, by quarantine, and we try to control the insect and animal vectors.

That is a very variegated program and although we have not been able to control certain things like measles and pneumonia and flu and the common cold, yet the efforts of our public health men have been so extraordinarily successful that we no longer die chiefly from infectious diseases. Infectious diseases now kill only about a third of us.

For instance, in this State diphtheria has been reduced seventy per cent; diarrhea sixty-six per cent; typhoid eighty-eight per cent, and tuberculosis more than fifty per cent. This means that our public health set-up, Federal, State, and county, as constituted, labors in only a minor part of the field today in order to hold the gains we have made.

If public health activities mean the prevention of sickness and death in the population, then, in the order of their importance in the white population of North Carolina, these are our major problems: First, chronic heart disease; second, Bright's disease; third, diseases of infancy; fourth, apoplexy; fifth, accidents; sixth, cancer; and seventh, pneumonia.

There is one other problem that doesn't show up in mortality tables but it is a grievous problem, and that is the mental sicknesses.

Of these eight major problems our present health departments deal with only one: That is infant mortality. Newspapers are dealing with accidents. Nobody deals with pneumonia. The other five of those major problems—the three blood pressure diseases—apoplexy, Bright's and chronic heart diseases—cancer and the mental diseases are our so-called constitutional diseases. Well, a constitutional disease means a hereditary disease. That is where we get our constitutions. Our present health departments have no facilities for dealing with those problems at all, and yet those are the diseases that are the chief causes of death.

These constitutional diseases—with an incubation period of years, that are passed from one generation to the next in contrast to our infectious diseases which go from person to person in a week or two—will require an entirely different attack than our present attack on infectious diseases. In view of the importance of these constitutional diseases, has the time not come for us to tackle that problem? I think it has. Has anybody laid down any plans for doing so? I don't know of any. It would seem

that we are satisfied to hold what we have in the infectious diseases and let morbid heredity run at will.

In order to combat these chronic constitutional or hereditary diseases, in the first place we will have to know more about human heredity. Although a study of individual families and individual traits is rapidly bringing to the light the mechanism of the inheritance of these diseases, yet at the present time I should say that the study of heredity has about reached the point that bacteriology reached fifty years ago in 1886 when it was unfolding rapidly.

In order to apply what we know and what we expect to know about hereditary diseases it will be necessary, I think, to have in the public health office—that is, the county health office—a family record bureau, just as we have a bacteriological laboratory. Your laboratory will deal with your infectious diseases. Your family record office will deal with hereditary diseases.

What should a family record office do? It should do this: Take an entire county and make a survey for the serious morbid traits. That sort of a survey is no more difficult than making a hookworm survey or a malaria survey. In rural counties where the population has been stationary for a couple of hundred years you will find out that a great many of those people have intermarried, and pretty soon most of your families are on one large pedigree. It is entirely possible to go to the members of any family—particularly the women over seventy—and get pretty accurate records of what they have sickened and died with, as far back as 1800. Sometimes you can go further back than that.

In the genetic laboratory there should be assembled the information that we need, to take eugenic measures to prevent the constant breeding of undesirable traits. Many of our undesirable traits such as migraine or shaking palsy, which are simple dominant traits, are no more serious than mumps or chicken pox. They don't need any regulation at all. On the other hand, congenital hereditary blindness, deafness and crippling, are serious maladies, and there is plenty of information right now to stop the breeding of blind children, deaf children, and crippled children—some forms of crippling.

Not only that—I think we have a sufficient motive to be able to stop the breeding of those children without attempting legislation. Everybody in the world wants children, but nobody in the world wants a blind child or a deaf child. When you can tell people with any certainty that the probabilities are 100 per cent, 50 per cent or 33 1/3 per cent that their children or some of their children will be born deaf or blind, I think that is a sufficient motive to stop the production of those children in that family.

The mechanism of inheritance of the cardiovascular diseases, cancer and the mental diseases is not sufficiently known yet so that safe and sane regulations can be laid down. Those things will emerge rapidly under any

system of county surveys of the entire population. I think this: That when John and Mary go to the clerk of the court and ask for a license to marry, and when the State gives them a license to marry, by implication the State is approving the raising of a family by them, and they should have a right to ask this question: What traits are in our families and what are we likely to pass on to our children?

Nobody in the world can answer that question and yet it is a very fundamental question, and young people who are marrying are the people who are interested in knowing the answer. With a family record office a license to marry should be accompanied by an opinion from the health department as to whether that is a proper marriage or an improper marriage from the health standpoint. I think the time has arrived to attack our hereditary diseases, and the method for such an attack is obvious and less complicated than our method for the control of infectious diseases. Hence I have suggested the establishment of a family record office in the Mecklenburg County Health Department and in the State Department at Raleigh. (Applause)

DISCUSSION

CHAIRMAN MCGEACHY: This discussion will be opened by Dr. Foster of Cumberland County.

DR. M. T. FOSTER (Fayetteville): It is hard to outline a health program to cover all the phases of health work for the entire State due to the fact that problems differ in different sections of the State, and differ even in different counties.

It is also indeed interesting to have the practicing physicians—such as Dr. Allen—analyze and criticize or give us constructive criticism as to the health programs that are being put on, because without their support, without their criticism, and without their help we cannot accomplish nearly as much as we have set out to accomplish.

Dr. Allen's paper brings out several points of importance. First, it brings out clearly the progress that has been made in health work during the past ten, fifteen or twenty years. A great per cent of the typhoid fever, diphtheria and the other diseases has been eliminated. The practitioners many years ago made their living merely from typhoid fever and diphtheria. Today these things are almost history. You can hardly find a sufficient number of these cases to teach the medical students.

That being so, there is no doubt in my mind but that health work is well founded and that we have made considerable progress in combatting these conditions. Discussing activities which a health department should carry on is quite a job. Primarily this must be left up to the health officer and the Medical Society or the health officer's medical associates in the section in which he is working, because in some particular sections, for instance, hookworm is very prevalent. I happen to be health officer down in Cumberland County and I know that. In other sections, other counties

of the State, especially the mountainous regions, I would think the percentage is pretty low. For that reason, hookworm work, intestinal tract work, should be carried on in my section in a big way, because it is one of our major problems. In the mountainous sections and other counties in which I have worked, hookworm is only a very small problem, and it isn't necessary to do very much about it.

So that programs to be carried on in health departments should be left primarily to the health officer, and to the medical men in that particular locality. They should, by making surveys and otherwise, find the problems in the particular localities, and then start to do something about them; not carry on a health program and do certain things just because they are considered public health activities.

Whenever the people in a county are educated to the fact that all their children between the ages of six months and one year should be given diphtheria vaccine, surveys show that fifty to sixty per cent of the children are vaccinated; and if the grammar grades in school run four or five per cent positive Schick tests, then it is time to kind of ease off on diphtheria work and get on to the other problems that are more urgent in that particular section. Therefore it is impossible, I think, for the State Board of Health even to outline a program for the State as a whole, except for certain particular activities which are found in every county as well as in every State. There are certain problems that Dr. Allen has mentioned that are common to every section of the State, particularly heart disease, cancer, pneumonia and the constitutional diseases with an incubation period of several years.

I believe as one works out a health program or works out the activities of a health department for a particular locality, whenever one can ease off of certain phases of work that one has been doing, the public has been educated and you have accomplished practically what you set out to accomplish. You think it will be carried on since the people have been educated to that program. Then it is time to slip off those particular things and get over to other activities which are needed more.

There are certain departments in the State, I am sure, that are doing something about heart disease, cancer and that sort of thing, but those problems are not nearly as easy to attack as the vaccination of children against diphtheria, smallpox, typhoid fever and the like, mainly through public health education, through the press, by removing the defects, through annual physical examinations, and all those sorts of things that hide disease. Cancer can be attacked through the Health Department, and I am sure that most health departments in the State now are doing a certain amount of work alone that line.

But I do believe there are activities being carried on in health departments which are being carried on simply because they are considered public health activities and not primarily because they are needed. I believe there are certain activities that should be included in the health

departments that are not generally accepted as health work and not generally carried on. There are a few contraceptive clinics throughout the State. But it is more or less unlawful to carry on these clinics. However, I do believe that sooner or later it will be an activity of well organized health departments. In the case of large families where the mothers have had eight, nine, ten, and up to seventeen children and their health is bad, it will do a lot of good if it is carried on in the right sort of way; I believe some time it will be a major activity in this country.

Mental sickness was mentioned in Dr. Allen's paper. That is a great problem in every state. It is a problem that health departments are doing very little about. It is a problem about which very few health officers and very few practicing physicians know much. They can't do much about it for the simple reason that they don't know how to handle it. They don't know how to go about it. I do think it is a major problem and I do think something should be done about it. But this is a problem that will have to be worked out through the State Board of Health and through the State institutions, so that psychiatrists can go out and hold clinics monthly or so many times a year, in the various counties. A great piece of work might be done along that line.

In closing, I would like to say that many health departments in the State are adopting the idea of the family folder—whether it is exactly the type of folder that Dr. Allen has in mind, I am not sure, but a lot of departments in the State already have the family folder. Other departments are gradually putting in their files. I think the family folder is very good when you have a sufficient number of nurses and a sufficient personnel to carry on your health work. In a county with a population of 50,000 and with only one or two public health nurses, and an inadequate personnel, I think the family folder is probably a waste of time, because there are other activities that are more important to them on which to spend their time.

However, with an adequately staffed department, I do believe the family folder proposition is a fine one. I would like to have my department staffed so that I could institute this family folder and carry it out to the letter.

As far as unveiling all the constitutional diseases and doing away with feeble-mindedness and blind children through the education of the parents is concerned, I don't know, but undoubtedly it would do good, and worked out along the proper lines it probably would help a great deal.

A lot has been said about heart disease being the chief cause of death. Well, it used to rate down about the seventh place. In my opinion that is the finest thing that has ever happened, for heart disease to rate first, for this simple reason: I hope to live long enough to see heart disease cause fifty per cent of the deaths or seventy-five per cent—heart disease and apoplexy—because when it does that means that the span of life has been lengthened; because the heart is just like an automobile. It will wear

out after a while. If a person doesn't die from some other disease, sooner or later the arteries and the heart are going to give way. They are not going to last forever. And I hope to see the time when the majority of people will die of heart disease. If I do, it will mean that I myself will have a greater chance of living longer, and so will everybody else.

Life expectancy in 1900 was the same as life expectancy for a seventeen-year-old child in 1933. In 1933 a person seventeen years old had as good a chance of living as many years after he had already lived seventeen as a child who was born in 1900. Heart disease has gone from the seventh place up to number one, and the higher heart disease gets, the greater the percentage of people dying from heart disease, the greater chance we have of living longer, and I hope to see the time when it causes practically all the deaths. (Applause)

Chairman McGeachy: Is there any further discussion?

I would like to ask that those who discuss papers be just as concise and short as possible so that we may run along with our program and get through in ample time for all our social activities.

Is there any further discussion of this paper?

Dr. D. E. Ford (Washington): In discussing the causes of death, death from apoplexy, heart disease, nephritis, mental diseases, in the first place we base our statistics on death certificates. How many death certificates tell the truth? What is the cause back of a lot of this apoplexy at forty-five and fifty, heart disease, nephritis, cardiovascular disease, so-called, and insanity? How do we know about what we are talking until we get statistics on it? If we look into death certificates coolly, we find that syphilis is the cause of most of them. I don't know exactly, but I probably have about 450 deaths down there every year, and probably in 50 of those, if I look back into the cause I could point out—not in the court; not hold up my right hand and prove it but I believe—that syphilis was back of them.

What you need first before you tackle this problem is to get a foundation for grading and having statistics and figures and truths so you know just where you are, and then perhaps you can attack heart disease. Of course the racial problem comes in—the colored and white. Syphilis is very prevalent among the white although we don't know it.

If we could only effectively attack our contagious diseases and vaccinate against them, and attack syphilis in an effective way, we would have a great many dying of heart diseases at sixty and seventy.

Dr. John H. Woodcock (Hendersonville): I should like to stress the importance, Mr. Chairman, of negative Wassermanns from these small restaurants and small boarding houses. They don't seem to attach nearly as much importance to that as they do in a good-sized hotel like the Schuyler.

Those people who work there, get a negative and then they go over to one of those other places, and it makes it much more dangerous for the public. Talking about educating these people—of course I haven't a great deal to do with the school children, but in my opinion, if the hotels would advertise that they take only servants who have had Wassermanns, and only servants who have negative Wassermanns, I think that would eliminate a whole lot of syphilis. There is an awful lot of it.

CHAIRMAN MCGEACHY: Is there any further discussion?

If not, I am going to ask Dr. Allen if he will close the discussion?

DR. ALLEN: I have nothing more to say, thank you, sir.

CHAIRMAN MCGEACHY: Has Dr. Carroll come in?

We will now have Dr. Carroll's paper on "Health Education in the School Curriculum." (Applause)

MR. C. F. CARROLL: Mr. President, Ladies and Gentlemen: I might state at the beginning that this is one of the few organizations that I know which begins on time, and coming out of the school field, I am very glad to notice that.

. . . Mr. Carroll then presented his prepared paper. . .

PUBLIC HEALTH WILL COME THROUGH PUBLIC SCHOOLS

By C. F. CARROLL, Swain County Superintendent of Schools

Coming before you, a technically trained group of health specialists who live by, in, and for those health concepts and practices about which I can have at best but partial knowledge, I naturally suffer a feeling of embarrassment. To add to this embarrassment, the presence of persons whom I know and by whom I am known makes it unwise, to say the least, for me to represent myself as an expert in any field of endeavor whatsoever. My friends would see through my attempt to do that.

I remember the story of the old woman who went into the side-show of a circus and saw, or supposed that she saw, a man read a newspaper through a two-inch board. (This was back in the days when the word *streamline* had not been coined and when women vowed that they would not permit the existence of cotton and woolen surpluses even if they had to encase themselves with three, four, or more petticoats.) The old woman, looking first at the man who pretended to be able to read the newspaper through the two-inch board and then looking at, and feeling of, herself, got up in great excitement and screamed out: "Let me out of here; this ain't no place for a decent woman to be with these thin things on." I fear that the attempt to disguise expertness on my part would be as transparent as the old woman thought herself to be; and yet, I do feel that every man, who believes in the importance of health education, should stand up in every company and proclaim the belief that is in him, so that by common counsel and by common action we may accomplish that upon which we have set our minds.

It is my understanding that a public health officer is a person who is usually a graduate in medicine, but who, even though he be a licensed physician, is not a practicing physician. He is primarily a sanitarian who is engaged in arousing, stimulating, and guiding people to help themselves by "preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment." To effect this desired condition, the public health officer necessarily becomes a health educator in the hope and with the reasonable expectation that he will be able to guide public thought into his own channel of thought and into his own plan of action. He is successful in direct proportion to his thinking and acting for the people. Thus, I maintain that the public health officer is primarily a teacher or else he is something other than a public health officer.

What progress have you made as teachers of health? With the supply of reliable statistics in your possession you can doubtlessly answer that question in a most satisfactory and concise manner. I can only give an opinion: Considering the youthfulness of your work, insofar as we measure time, I think you have accomplished much, particularly since you work with such a wide, diversified group of people; yet, I believe that you should "pull your punches," so to speak, from certain portions of your clientele, and pay more attention to the most receptive portion of your clientele. What do I mean? Just this—in order to popularize and establish your work you have been compelled to cater too much and too long to the adult groups. You can defend yourself against this constructive accusation by stating that public health means the health of all the public; also, that your very existence as a governmental functions depends quite largely upon the good will and esteem of the adults—the group which, financially speaking, makes the proverbial mare go 'round. But, looking at the problem of public health in the light of ultimate accomplishments, do you not think it better to start at the bottom? Working with adults you can do nothing more than to inform them, to give them knowledge of basic health facts; but there is no direct correlation between knowledge and habits. Because of its very nature, the school is best suited for improving habits, and habits are the foundation stones of healthful living. The schools reach the whole population, and there is no other means for reaching all the people so effectively.

There is a growing feeling among public school educators that the best way to attack the adult education problem today is not so much through an extensive adult education program such as has been in operation on a widespread scale in recent years but by preventing illiteracy and deficient traits and characteristics among the children. Teach the children in their formative years and while there is greater probability of their learning, and appreciating, and practicing correct health principles and you have taken the proverbial stitch in time. Applying the same idea to your problem, do you not agree that it is better to make the approach to public health through the schools?

For an ideal school health program it is recommended that we have a personnel made up of several individuals who contribute to school health as specialists, to wit: school physicians, school nurses, physical educators, dentists, dental hygienists, nutritionists, psychologists, or psychiatrists, and health educators. That is the ideal set-up, I said, but since the State of North Carolina is either unable or unwilling to provide that which tends towards the ideal, we shall stay on the practical level and recognize the probability that during the next few years in 95% of the school districts in North Carolina public health physicians, nurses, and dentists will constitute the only professional personnel at the disposal of school health programs. Upon this assumption, therefore, and with the further feeling that you see therein what is probably your own best opportunity, I want to make a few suggestions in the hope of improving the present situation.

You yourself visualize the magnitude and the ramifications of the public health problem, but unfortunately there are too many potential deputy health officers in the role of school teachers and supervisors, even as I, who do not see or feel the problem as do you. Accepting the philosophy that "it is not an evidence of intelligence to do a thing yourself but to get somebody else to do it for you," why don't you take steps toward utilizing this potential strength and energy?

You reply, "Oh, it is the duty of the school administrators to put the deputies to work!" Yes, and no! We should see the problem and the opportunity, but we don't see it because you have not taken the steps to show us how we can help you.

As much health education will get into any school health program as the administration in charge approves, and the extent to which health education is approved will be in close proportion to the administration's own concept of the relative value of knowledges. If, for instance, the idea should prevail that the school's chief responsibility is to teach bare facts, then bare facts will receive greatest attention. On the other hand, if the school recognizes its chief responsibility to be training for citizenship, with due consideration to the child's physical, mental, social, and emotional welfare; or, as Herbert Spencer expressed it, that "the first requisite to success in life is to be a good animal," then the school will establish and maintain a militant health education program as something *basic* to the entire educational program and thus satisfy the *basic* needs of those for whom the schools function.

Equally desirable as the administrator's point of view is that classroom teachers themselves possess knowledge of, and manifest real, sympathetic interest in, a modern health education program. Every classroom teacher, for satisfactory service, according to opportunity and corresponding responsibility, should have a clear understanding of health; be ready to support and coöperate with reference to the general or special health of the school; be keen to observe pupils intelligently in relation to health; and be able to correlate and apply health teaching in any situation in the school.

Too many of us administrators and teachers in North Carolina do not possess these necessary qualifications for conducting a satisfactory school health program. Why? Because the subject of health education was not included in our courses of preparation for the positions we hold. Why was it not included? Because it was not required for obtaining our teaching certificates? Why was it not required? We might as well seek to learn who killed Cock Robin.

For many years the State Board of Health has been carrying on a very acceptable type of health work within the schools, but all the time it has been in the name of the Board of Health. Simultaneously, there has been carried on in a fairly acceptable way a haphazard type of health work under the sponsorship of the State Department of Public Instruction. Cordial relations have existed all the while between the two departments and sometimes one department knew what the other was seeking to do. But, my dear friends, cordial relationships and spasmodic acquaintance with what each other is doing are not conducive to a productive school health program.

What we need in North Carolina today is a health education program within the schools that is militantly purposeful in every respect, and that is supervised by, and is responsible to, one known agency. Therefore, I recommend that consideration be given to the idea of establishing in North Carolina at the earliest possible time a department or agency whose chief duties will be the promotion of health education in the schools by coördinating and making more extensive and intensive the various health activities which do, or can, contribute to a sound health education program. Whether this department or agency would function under the State Board of Health or the State Department of Public Instruction is of secondary importance. I am interested solely in the fulfillment of a real *need*. For the directorship of this department or agency, I would recommend a person with public health training and, if possible, with some background in pure educational work.

The director of health education within and through the schools could be of invaluable assistance in many, many ways, some of which are as follows:

(1) In collaboration with the director of the curriculum, he could take steps toward placing health on a par with other subjects now being taught. I do not believe that health education can be taught, or should be taught, in a cold formal manner such as we would teach arithmetic or French, if it is to be made productive of satisfactory results, but I do believe that knowledge of health principles should be taught formally as a prerequisite to the practice of correct health principles. Therefore, I contend that we have gone far enough in treating health as an incidental matter, and that somewhere within the curriculum there must be found a place for that subject which is basic to all other subjects.

Interpolation—(If I may be personal I have taught in your East and

in your Piedmont and around here in your mountains, and I have some idea of conditions all over the State. In your high schools of North Carolina today no provision is made for health in a great majority of cases. Last week, with some persons interested in health education work, I looked at suggested schedules of daily work for your elementary schools, and time after time we saw "Take Up Health" incidentally. And believe you me, it is very incidentally when it is taken up—just a perfunctory waste of time too often.)

(2) The director of health education could work with the division of certification with the view of requiring all in-service and pre-service teachers and supervisors and administrators to prepare themselves for conducting a health education program. As stated previously, too many of us now in service are not prepared to handle this responsibility simply because we were not required to be prepared. But it is not too late to prepare ourselves, and certainly it should be comparatively easy to make it mandatory that all new teachers be thus prepared. Teacher-training institutions will coöperate readily once the fact is known that there is a demand within the schools for this type of training. And should teacher-training institutions begin this type of work, let us remember to insist that we keep too much theory out of the process. Also, let us insist that the teachers themselves be examples of health and that they become proficient through the laboratory method rather than through the lecture method.

(3) The director of health education could work most effectively with the division of schoolhouse planning. How many schoolhouses in North Carolina are not conducive to healthful living on the part of their tenants? Poor sites; incorrect orientation; inadequate or impure water supply; inadequate toilet facilities; improper lighting; inexcusable seating facilities; lack of fire protection; etc. A person's habits are influenced by his environment, and if we expect good habits to be formed by children let us assume our rightful responsibility and make it possible for them to form good habits.

In connection with the question of environment, let us remember that after all is said and done the upkeep of the school plant is of greater importance than the type of plant. Public health officers in North Carolina could render no greater service, in my opinion, than to encourage the employment of school janitors who do not have to go into a huddle with themselves to decide whether dirt is dirt. An incompetent janitor can thwart any health education program that may be undertaken. And while trying to make a sanitarian out of a janitor, why not require him to dress the part of a sanitarian. Cleanliness is as contagious as dirtiness, is it not?

In connection, too, with the question of a proper and sanitary school plant, I would recommend a careful inspection of the school plant at regular intervals. And why not give publicity to the percentage ratings? How much more important, if any, is the sanitation of a small cafe and a school plant housing scores and hundreds of children for even longer

periods of time? Through the press you warn people of unclean eating and drinking places. Why not warn children and parents against unclean schools?

(4) The director of health education could work most effectively with the division of instructional service with the view of integrating and correlating the entire subject of health education with all other phases of education. How can natural science or social science instruction, for instance, be integrated with health education, and vice versa? Until health becomes basic to all other parts of the educational program, health is the step-child of the curriculum.

(5) The director of health education can work most effectively with the director of the budget. As long as there is any degree of discretion to be exercised by the director of the budget, you can figure that he is going to exercise himself in favor of those objects of cost in which he is most interested. The director of the budget can and should be interested in the question of health if approached properly, and when that is done equipment and supplies necessary for a health education will be provided. And in connection with this, I wish to recommend strongly that before the beginning of another school term you, as leaders of thought and action in matters pertaining to health, exercise yourself in behalf of the placing in every school in North Carolina an adequate first-aid kit and that you train at least one person in every school to administer first-aid intelligently. Have you stopped to think how many school communities in this rural State have no physician available and how easy it would be for an injured child to be lost sometime through lack of prompt and competent attention?

Summarizing—I feel that at the present time it is incumbent upon you to lead the fight in North Carolina for better public health. You are trained for the work, and you are better trained than anybody else. Your work through the schools and with the teachers will prove the best means of approach to your task, but unless you take steps to strengthen the schools and the teaching personnel you will not accomplish the greatest amount of good. I believe the thinking element of the teaching profession welcomes your attempts to make it more intelligent for the job at hand. Why not use us as your partners?

DISCUSSION

Chairman McGeachy: Professor Carroll, you are not a doctor but I tender you a life membership in the North Carolina Public Health Association, and we hope that everywhere we go, you will be there.

We have one man in the audience who is big enough to have the privilege of the floor whether we offer it to him or not. Dr. Ziegler is in the audience. I want him and all the other visiting physicians to feel that they have a perfect right to discuss any paper that is to be discussed.

Dr. Cooper, will you lead the discussion?

Dr. G. M. Cooper: Ladies and Gentlemen: After reading Mr. Carroll's thoughtful and able paper, and in order to keep within the time allotted for discussion, and also to measure very carefully my statements, I have written out what I think I want to say.

. . . Dr. Cooper then presented his prepared discussion. . . (Applause)

DISCUSSION OF MR. CARROLL'S PAPER: "PUBLIC HEALTH WILL COME THROUGH PUBLIC SCHOOLS"

By G. M. Cooper, M.D.

There have been in North Carolina for some years a few men and women who have had a discerning and sympathetic insight of the problems of public health. They have understood the fundamentals of health education, the deep need for such work, and the results that might be expected from an informed public. Of this group I place Dr. Carroll very high up. He is one of the few men who have fully grasped the signficance of the pubilc health movement. The late Dr. A. T. Allen, Dr. J. Henry Highsmith, and Miss Hattie Parrott, of the State Department of Education, are others that I might mention. There are, of course, a considerable number of class-room teachers, now and then a principal, and an occasional county superintendent of schools who belong to the same category.

I am pleased to hear Mr. Carroll emphasize the fact that the public health officer should be primarily a teacher of health education. I fully agree with Carroll's statement that "if he is not a teacher of health education, he is not a health officer." The health work rests on a basis of health education. The health officer's success is always in direct ratio to his success in teaching the people in his jurisdiction the fundamentals of health education—in other words, giving them information which they can understand.

From the very beginning of my own interest in public health work I realized that the schools, and before the schools the cradle rolls and the beginners and even the prenatal work for the benefit of children as well as mothers, was the place to work as a public health officer. It has pained me more than anything else in my work with the State Board of Health during the past twenty-one years to find so many county and city health officers who were not interested in school health work. I have seen too many of them delegate this work to nurses, or any substitute, to keep from doing it themselves. Nothing has ever given me greater pleasure in visiting around than to have a few minutes to call on a county health officer and to have his office clerk tell me that he is fifteen or twenty miles in the country examining school children. I know then that he is a health officer.

Mr. Carroll is right in stating that it is the only approach possible if permanent results are to be obtained. He emphasizes one point that has been my platform for all my health work in schools, and that is, that

the health officer must not try to do it all. He must lead in doing it, but he must utilize the service of other responsible people. I cite you for evidence of our feeling in this matter to our first State medical inspection of schools law, which was enacted in 1917. The fundamental basis of that law was that we should begin with the teacher. Therefore after months of efforts we devised a school card in collaboration with officials of the U. S. Public Health Service, who had devoted years of study to that particular feature, and to officials of the American School Hygiene Association. This card to have two sides, one to be filled by the teacher—and to fill it intelligently she would have to have considerable knowledge of what she was doing; the other side to be filled by the health officer or the physician who examined the children found needing it and the physician or dentist who treated the children. We used that card successfully for more than ten years. One of my prized possessions many years ago was the thousands of cards which had been filled by ignorant Negro teachers which would have done credit to any one today.

Three or four years ago some school officials in the State made a great to-do about "screening" children. This was what we were doing twenty years ago, and have been trying to do ever since. The parents represent the first step in the series, the teacher the second, the nurse the third, the health officer or the school physician the fourth, and the family or treating physician, the surgeon or the dentist the fifth step in the enterprise. All of these agencies are necessary if success is to be achieved.

I have had periods of deep disappointment, but today when I look back to the beginnings, more than twenty years ago, of our efforts and see the great progress that we have made, I feel very happy. One of the chief points is that which is emphasized by Mr. Carroll in the closing of his paper, and that is today principals and teachers all over the State welcome our attempt and help us in every way possible. It was not so when we commenced this work; we met antagonism on every hand. We were all but turned out of many school buildings when we made our first efforts. County superintendents—many of them—refused to come to our school meetings. Principals who were college graduates, superintendents of city schools, when they had to attend these institutes provided in those days for teachers' certification, would edge up on the back side and spend the time smoking and reading a paper when we were trying to present this important program to the school people. I am happy to recall, however, that the majority soon became interested and gave us a glad hand.

In conclusion, I want to emphasize the principal point in Mr. Carroll's paper, and that is that the chief difficulty all up and down the line has been due to the fact, as we have repeatedly proclaimed in our literature and all our publications and public talks, that the teachers have not been as helpful in this important matter as they would have been had they had health education included in the course of instruction given in institutions which trained teachers. We have repeatedly urged that this course be given

in all schools, from the university down, which send out teachers, and that the course be made compulsory and full credits be given when a teacher takes this course, and then that it be a part of the school curriculum. It is no need to waste time on worrying about the fact that it has not been done so far, but to join hands in bringing about such a requirement immediately. Just as soon as such a requirement is demanded, the legislature should enact a law forbidding any county to employ a superintendent, a principal, or a teacher who has not mastered this course in a standard college for teachers.

It ought not to be necessary to emphasize again Mr. Carroll's statement about the necessity of proper environment for the school child. If the school does not set the example of modern sanitation, seating, lighting, and every other requisite of public health, including the immunization of children, the institution of proper eating habits, particularly at school, and other things of equal importance, where and when is the child to get information on this subject? When a child comes from a sordid home, with no sanitary facilities, and finds the same thing existing in the school, naturally he grows up with the impression that that is the proper thing.

I will not discuss Mr. Carroll's proposal about the establishment of a new agency to have solitary control over the health education work in the State. That is a matter which will require diplomacy on the part of the officials of the State Board of Health and the State Department of Instruction as well as a give-and-take attitude on the part of both departments. In short, it is a matter of fundamental policy that must and should be worked out with one point alone in view, and that is the system eventually adopted must be for the best interest of the greatest number of school children.

Dr. John Williams (Asheville): I think that is the best paper that I have heard read to a group of health officers. But maybe it is sort of a little bright spot in the program. These school people are beginning to wake up. One of them came to me—it was his own project—and said "Out at our training school for teachers we are going to give them credit" (and that has been the keystone of the whole thing) "for any health work that they have been teaching in schools." In these teachers' training schools the people who are there and have to make every minute count, don't get any credit for the lectures they hear or any talks on public health.

He says, "Now we will do this: We will outline a program and we will have a lecture or laboratory work or something, every morning at eleven o'clock. That will go on for thirty days. At the end of that time we will give that teacher credit on her certificate for her work in public health," so there is one little bright spot that has been started in western North Carolina. (Applause)

Dr. D. E. Ford (Washington): Out in eastern North Carolina in 1927, 1928 and 1929, the summer school there gave credit to their teach-

ers (and about three hundred of them took it through the summer school courses) for health education courses. I taught there. And there have been results because theachers have come back to me all through these years afterwards saying, "I was in your course," and they have been better teachers because of it.

Dr. P. P. McCain (Sanatorium): Mr. Chairman, in the last ten years through our clinics we have had close contact with teachers in most of the counties of the State and it has been tremendously encouraging to us to see the almost one hundred per cent coöperation that the teachers have given to us, not only the white teachers, but the Negro teachers also. They seem to be almost hungry for an opportunity to do what they can towards improving the health conditions of their children.

Also it seems to me that Mr. Carroll emphasized an important point in saying that we can educate the parents through the children. When the children go home and show this positive tuberculin test, even though they do look well nourished and as though they are perfectly healthy, and the children say that the doctor said they need X-ray pictures, the parents are ready to go down into their pockets and produce a dollar to pay for the X-ray films.

It seems to me that this is a most statesmanlike paper and I hope it will be read at many other gatherings throughout the State. (Applause)

Dr. N. T. Ennett (Greenville): Someone said that Mr. Carroll's paper was the best he had ever heard read. Not only do I think it is valuable for this audience to hear Superintendent Carroll's paper, but I thought when I was listening to him how well it would be if the General Session could hear that paper.

We are not going to get any further in public health education—whether it happens to be in the school or in maternity and infant welfare work—than the sentiment of the private practitioner will permit us to go. You have to interest him first in every project that you want to put over in the way of public health.

Of course the beginning of that sort of process of education ought to be in the medical school. As you must have health education taught in your teachers' training schools, just so should the medical school give more attention to public health education. Then, when the doctor comes out to practice medicine he will feel that it is a part of his obligation to his community to promote public health, through a health organization. Of course private practitioners do a great deal of public health in the name of private practice, but what I have in mind particularly is to get the united support of the private practitioner in public health as it is done through the public health office.

If you can get the private practitioner interested in public health in the schools indirectly you will get your teachers trained in public health, because if being trained in public health is a prerequisite to the teacher

being able to get a certificate, then your teacher will learn something about health in the training school and will be able to carry it over to her classes.

I don't think there is any question that health education—or rather health—is the first objective of education. If that is true then there is certainly no place where the health officer can better spend his time than in trying to help the teacher—well, we will begin with the superintendent—help the superintendent and the principal and the teacher put in a real program of health education in the schools. All of you know, I am sure, that the principal is no more interested in health education than is the superintendent, and the teacher is no more interested in it than is the principal. So you must start with your superintendent.

For instance, when I went to Greenville as health officer—and I was offered that position before I accepted it—I said, "There is one man I want to interview."

And they said, "Who is that?"

I said, "Your superintendent of schools."

And they said, "Why do you want to see him?"

I said, "I wouldn't care to come here unless your superintendent is interested in health education in public schools, because I do not think I could be happy in my work unless I had the cordial coöperation of the school people in the health program that I want to put on."

Superintendent Carroll's paper had so many good things in it: It was so well said, and it seems to me so timely; because you can't improve the health of the people until you begin with the school child. You are not going to improve the health of the people through the school child until you get the school people interested in public health education. Superintendent Carroll must be a shining light in the school system. (Applause)

Dr. W. P. Richardson (Raleigh): I think Professor Carroll has put his finger on what is the greatest problem and the greatest opportunity with which we as public health workers are faced. While it probably is true as he has suggested that not all of the school people, not all of the superintendents, not all of the teachers, have the interest, the vision and the information in regard to health matters which Professor Carroll has, and which he would like to see all of the school people have, it has been my experience, as that of Dr. McCain and his workers, that they are indeed receptive if we approach them properly. I think that the very first step which we as public health workers should make in helping to put on a more effective health education program in the schools is to be informed as to the possibilities of teaching health in the ordinary curriculum of the school, and, as Professor Carroll pointed out, through the environment of the school building, the school plant itself.

Last summer I had the privilege of sitting in with a committee of which Professor Carroll was a member, which was formulating an outline

for health education to go into a teacher's manual for the North Carolina school system. It was quite an eye-opener to me to find out just what possibilities there were in the ordinary curriculum of the school for teaching health education. Unfortunately this outline is probably not as extensively used as it would be used if these teachers were more interested, but I think that we health officers should inform ourselves as to the contents of this outline, and as to the possibilities which it presents; and through developing close coöperation with the superintendent of schools and our school teachers, aid them in making this a vital and fundamental part of the health program, because, as each speaker has pointed out, there is certainly nothing more fundamental in the child's education than the question of developing and preserving a sound physical body. The finest education is not going to do him very much good if he dies or becomes an invalid. It is a question in which we are vitally interested, and I think, as I said, that the first step is to inform ourselves as to what the schools are already doing, and the possibilities which their program contains, then develop our coöperation along the lines which this study reveals. (Applause)

Chairman McGeachy: Is there further discussion of this paper? It is open for discussion if anybody else wishes to discuss it.

If not, I am going to ask Mr. Carroll to close the discussion.

Mr. Carroll: Mr. President, I do not care to take more of your time because you have been very gracious already. I would like to lay emphasis, however, upon one point touched on only briefly, and that is that the teacher herself be an example of health and that is what I had in mind a while ago when I spoke about preparing these teachers by the laboratory method, rather than through the lecture method, so that teachers be advised and expected, in your teachers' training institutions, to so live as to develop within themselves a healthful body, not only physically but otherwise.

In our system, through your coöperation—and everything that our system is doing is yours, that is, the public health department—we are giving a certificate of merit in health to those pupils who attain certain requirements or qualifications listed or recommended by the public health department.

One year ago, out of a schoolroom containing about thirty-eight children, sixteen of those certificates were given. That indicated almost one hundred per cent physical health. That was made possible solely because the teacher herself was an example of health, one of the most healthful personalities I have ever known.

This is a little incident, and I merely cite it to you as an example. For instance, she was teaching the evil effects of coffee drinking on the part of her pupils. In order to be consistent with her teaching, she stopped drinking coffee herself. I personally would have to think about it until the day after tomorrow before I arrived at that point, (laughter) but it

merely carries through the idea that if we can get the teachers—and you are the folks who can generate and develop the sentiment throughout the State requiring it—to put it across they will be the best assistants that you can possibly have. (Applause)

CHAIRMAN MCGEACHY: The next paper is by Miss Josephine Daniel, director of Nursing in the State Board of Health.

Miss Daniel!

. . . Miss Daniel then presented her prepared paper. . . (Applause)

PUBLIC HEALTH NURSING

By JOSEPHINE L. DANIEL, R.N.

Consultant in Public Health Nursing, Division of County Health Work, N. C. State Board of Health

In choosing the subject, "Public Health Nursing," we believe it to be one of particular interest to public health workers at this time because of the development of the entire public health program, including public health nursing, by reason of the provisions made for expanding public health work in North Carolina through Social Security Funds.

Realizing that our President and Congress were planning a long-range program to aid the State and local communities in developing a more adequate public health program, the Conference of State and Territorial Health Officers, meeting with the Surgeon General of the U. S. Public Health Service in June of last year and again in April of this year, adopted qualifications for personnel which these leaders in the public health field realized were essential if the public health provisions of the Social Security Act were to succeed on the permanent basis for which these provisions are designed. Therefore, they adopted the following qualifications for public health nurses:

I. The public health nurse must be a graduate registered nurse with a deep interest in people, tact, poise, integrity, initiative, teaching ability, and vision. All of this seems like a large order, but I believe it can be summed up into the more familiar words of "good personality plus ambition."

II. The public health nurse must be a graduate registered nurse with a high school education, or its equivalent. Students with additional college training have been given preference. At a recent meeting of the North Carolina League of Nursing Education it was brought out that student nurses who have had several years of college work prior to nurse training are more mature and adapt themselves to the course of study more readily than the student with only a high school education.

III. The public health nurse must be a graduate registered nurse from a nurse training school connected with a general hospital having a daily average of fifty patients or more, with all types of services provided

therein. This requirement recognizes the important point in good basic nursing education. Daily the public health nurse uses the knowledge acquired in her course of training, whether in the organization and set-up of an immunization clinic, in the instruction of a prenatal case, or in the aseptic care of her clinical thermometer.

IV. The public health nurse must be a graduate registered nurse who has had either a post-graduate course in public health nursing (consisting of not less than three months), or two years of experience on the staff of a health agency which provides good public health nursing supervision.

This last qualification may not seem to give credit for knowledge gained in the school of experience without adequate supervision. Let me pause to say that these public health nurse qualifications have been determined by public health leaders, both physicians and nurses. In the early days, there were no formal courses in public health education offered and these pioneer workers were responsible for formulating such a course. Their work, as every other pioneer project, was the result of trial and error methods. Those methods found effective and economical were conserved; useless ones were discarded. If we are to advance public health work, the younger workers should have the benefit of this accumulated experience. The easiest way in which this can be presented is in the classroom.

Last year at a meeting of this same organization at Pinehurst, Mrs. Jean T. Dillon read a paper on "A Well-rounded Public Health Nursing Program." Mrs. Dillon's paper might well have been read again at this time because she completely outlines the different services rendered by a public health nurse. You will remember Mrs. Dillon discussed this subject under the headings of maternity, pre-school, school, communicable disease and orthopedic services; she stressed the importance of health education as the main objective in all services.

The different services are more or less divisions to meet the health problems in certain age groups as well as specific diseases. Public health nursing went through the stage of specialization. Under that plan, one nurse was entirely responsible for all maternity work in a community, another nurse responsible for all tuberculosis work, and still another for all school work. I do not need to tell you, as health workers, that in one family it is not uncommon to find the mother to be a prenatal case, the father to be an open tuberculosis case, and one or more of the children to be acutely sick with a communicable disease. If workers were specialized, such a family would be visited by the maternity nurse, the tuberculosis nurse and the communicable disease nurse or school nurse. It isn't difficult to recognize the wasted time and energy in such a method of procedure. Thus, we find many health problems in a single family, and experience has shown that the generalized nurse can render each service needed to every member of a family more effectively than two or three different specialized nurses.

If your county or health district is to have additional public health nurses, the most effective and economical procedure is to divide the total area into geographical sections and give each nurse all the responsibility of the public health nursing program in an assigned area.

The annual program of work should be outlined at the beginning of each fiscal year. This program is made by the health officer and his staff, together with the County Board of Health. It is based on community needs determined from the vital statistics reports, which is a fairly good index to the health problems within that county. We know, of course, that a limited number of health workers cannot possibly reach every health problem in a whole county. In 1927, the Appraisal Form for Rural Health Work was published. This manual recognized a generalized program of health work and gave us the proper percentage basis for different types of services. This percentage is based on vital statistics reports. Such an annual program should follow the appraisal form percentages and state the objectives to be accomplished within that twelve months' period of time. The detail of carrying out this program of work is the duty of the health officer and his staff. It is a decided advantage if each individual worker outlines a program of work at the beginning of each month. This monthly program should be approved by the health officer. Regular staff meetings for the discussion of common problems provide unity in the work as a whole, and are stimulating to each worker.

Let us turn our attention to the specific planning of a generalized public health nurse's program. There are many governing factors to be considered in program planning; first, the county itself, its size, roads and general topography, the population, the kind of population; second, the special health problems such as tuberculosis, high maternal and infant death rate, etc.; third, the available facilities within the county, such as hospitals, churches, welfare organizations and recreation centers; fourth, the number of personnel in the health department; and fifth, the wishes of the taxpayers regarding their own health program.

The ratio of public health nurses to a given population varies greatly in the United States. In the urban center one frequently finds the districts include a few city blocks; in the rural area one finds the districts include many square miles. In organizing an ideal generalized public health nursing program Dr. Smillie says the "usual plan is to assign one nurse to approximately 1,200 families."[1] Considering five persons to the average family, we have one nurse to approximately 6,000 individuals. The County and District plan in North Carolina does not begin to meet this ratio, even under the recent expansion made possible by the Social Security funds, but it is an objective for which each health officer should strive.

If we have a county with a population of 50,000, including a town with a population of 20,000, the ideal county health department should have

[1]"Public Health Administration in the United States"—Wilson G. Smillie, MacMillan Company, 1935, Page 191.

a health officer, a nurse supervisor and eight staff nurses, at least three sanitarians, and three clerks. To organize and administer public health nursing, the entire area should be divided into approximately eight districts, and "each nurse carries out all types of public health service in her territory. Thus she becomes familiar with the family problems and the social structure of every part of the community and is known personally by every individual."[2] Perhaps the only time it is necessary for several nurses to work together will be in midwife instruction, or clinic work. Each nurse should have an office or headquarters in the center of her district and should keep definite office hours. This office might be established in a community hall or a consolidated school and used for parent consultation, clinic or class work. The supervising nurse is the connecting link between the administration and the nursing staff.

I have described the organization, administration, and geographical division of a county with an adequate number of public health nurses. Only too often we find a county with a total population of 50,000 people, the health department personnel consisting of a health officer, two public health nurses, one or two sanitarians, and a clerk. None the less, the organization and administration of public health nursing is the very same. The county should be divided into equal parts, health centers established within that area, and each nurse conduct a generalized program of work, and be detailed to another district only to help in class or clinic work.

If there are only two public health nurses in a county health department, where the ideal would be a nurse supervisor and at least eight staff workers, these nurses must constantly select the cases and so organize the work in order that the program will be generalized and each service receive its proper allotment of time and thus serve the community to the best advantage. The maternity program can be used for an example: In this county of 50,000 population, one will find approximately 1600 live births per year. The appraisal form has suggested that 40 per cent of the prenatal cases should be under nursing supervision, if the average neonatal rate for the past three years is fifty or more. If this standard is maintained, each nurse must visit about 320 prenatal cases each year. This number isn't so startling, yet the prenatal nursing supervision is only one-half of the maternity program because the post-natal period must also have supervision. Certainly the only plan to follow is the supervision of primapara and of cases referred by physicians and midwives as needing special instruction because of an abnormal condition. The health supervision in the public schools might on the other hand consume all of the nurse's time.

Public health leaders have agreed that a program of work in the average rural community should be approximately two-thirds of the total time for maternity and child hygiene; the term "child hygiene" usually includes individuals up to twenty-one years of age; and one-third of the total time

[2]Ibid, Page 191.

for communicable disease control, including tuberculosis, syphilis, and gonorrhea. It is understood, of course, that all types of work are carried concurrently throughout the year.

The year's program of work will show definite objectives to be accomplished; the month's program of work may have the appearance of a calendar, allowing days or one-half days for specific work; and the day's program will show office hours, group activities, type and number of home visits. The daily program should be planned rather definitely each morning. It is economy in time as well as expense to visit several prenatal cases, release a quarantine and demonstrate an infant feeding formula in the same neighborhood.

I have tried to describe the generalized program of work for the year, month, and day. This plan does not provide for emergencies, which we all know interrupt every department. None the less, the objectives for the annual program do not change, the monthly and daily programs are designed to keep the work well balanced, and the daily report certainly shows the activities of each worker.

The essentials for the organization and administration of public health nursing in a large health department are left to the supervising nurse. There might be some confusion about the duties of this supervisor. She is the connecting link between the health officer and the staff. It is her duty to interpret the policies of the local and State health organization, to assist with program planning and to provide staff education for the group. Nursing supervision should mean unity in record-keeping and techniques and should keep the staff nurse interested and enthusiastic in her work, eager to use her own initiative and improve her own practices.

The State Board of Health should provide a generalized public health nurse consultant. This consultant nurse should assist the health officer to find qualified workers and should offer to the nursing personnel systematic guidance in accepted techniques and record-keeping by means of district staff education.

The measuring of the results of any type of education is difficult. Certainly, public health nurses cannot take all the credit for the improvement in the health conditions of this country. Improved methods of sanitation, sewage disposal, safe milk and water supplies, and scientific research and the newer methods of immunization have had their part in the reduction of rates from specified diseases. But public health nurses have made their contribution in this great health movement. Perhaps the first result noted after the entrance of a public health nurse in a community is the better public understanding of the whole health movement. "The successful public health nurse, the one who is adequately prepared for her job, is an ideal interpreter of medical, sanitary, and social procedures. She is as much of a help to the sanitary engineer and the social welfare worker as she is to the medical officer in keeping them informed regarding condi-

tions she finds in the homes and the schools and in interpreting their specialities to the families."[1]

Certainly the public health nurses have been instrumental in bringing more people to medical attention, lives of mothers and babies have been protected, an increased number of children have been immunized against communicable diseases, better hygiene and sanitation in the homes have been provided, a greater interest of parents in the correction of physical defects of children has been brought about, and I believe we can justly say that there is a deeper understanding by parents of the importance of emotional factors in the mental and physical development of the child.

To make this paper a truly modern one, something must be said of the present day trends in any given profession. Perhaps the most outstanding trend in all professional groups is that tendency to analyze the present status of work, always with an eye to the future. Several years ago, a large department store in New York City employed a research worker to find out why people came to that store to purchase their commodities. We find this same tendency of analysis in the public health field. The U. S. Public Health Service in Washington, under the Division of Scientific Research, has a department called "The Office of Study Methods." That department is concerned with studying current practices in public health administration. The object of such study is to find and recommend effective methods of administration and practice. Forsyth County, North Carolina, was chosen in 1933 for a family case study, and I believe Dr. Hege will give you the details of how that study was conducted. I hope he will tell you how that study influenced public health practices in his department.

Several years ago the National Organization for Public Health Nursing conducted a survey of staff activities. That study revealed rather surprising facts. We had thought we were good teachers, but the study showed that, as a whole, we rated poorest in our ability to teach. Immediately accredited schools for public health nurses turned their attention to teaching, in order to eliminate that weakness; again, the effect of this study is noted in the fact that many public health nurses are analyzing their own work. "Why doesn't that mother seek medical supervision with this pregnacy, when she knows she always has a difficult time?" "Was my teaching inadequate?" "Are the community facilities lacking for adequate supervision?" These analytical questions should constantly be before us.

I believe I am not too dogmatic when I say that every health officer in North Carolina has a real duty to his nursing staff in helping each nurse to analyze her own work. We might call this process of analysis, constructive criticism.

There is an old adage, "Two heads are better than one." In our own work this is certainly true because as a result of regular group conferences

[1]"Public Health Nursing in the United States."—P. McIver, Illinois Health Messenger, March 1, 1935.

one sees the development of new ideals and methods of procedure. Each worker gets a thrill of research and this inside stimulation should mean professional growth and development as well as individual happiness.

I have attempted to discuss this subject, "Public Health Nursing," under the headings of the qualifications for a generalized public health nurse, a generalized public health nursing program of work, the results which might be expected from this program of work, and the present-day trend of self-analysis and the part each health officer plays in developing this trend.

With the opportunity at hand whereby each health department may enlarge its public health nursing program, it is very important that all nurses and health officers exert every effort to improve the public health nursing service as to the content of the nursing program and the type of service rendered. If the local communities come to realize the benefits derived from an enlarged nursing service, it is hoped and believed they will demand and support an ideal public health program.

The responsibility for the success of a larger public health nursing program rests upon every public health worker, and I am sure all of us will stand united in our common undertaking to prevent disease, prolong life and increase physical and mental health through the organized efforts of our professions and the community.

DISCUSSION

Dr. J. Roy Hege: Mr. Chairman, I think our president and secretary should be thanked very much for this program. They could well have called it a symposium on health planning, because it seems that from the first paper to the last that has been the trend of discussion. I don't know of anything that we perhaps need more of, or in which we should be more interested.

Miss Daniel's paper, coming last, of course, has discussed the angle of the public health nurse and has pointed out a good many things that fit right into the program of the plan.

In discussing the paper you can easily drift into any one of the papers that have been discussed, and I had some desire to get up before. I would like to say just a few words about what has gone on.

Some of the bright lights were mentioned by our friend, Williams. An experience that we had comes to my mind now. The Yadkin County superintendent of schools asked the health department to conduct five teachers' meetings in the course of one year, and they were asked to plan some health work for the schools. This was an opportunity to get across to the teachers in teachers' meetings what you would like to go through the schools.

I think that shows to us very clearly that the school people are conscious today of what we would like to do. I think they are anxious to help do it or to do it for us.

The teachers' outline has been mentioned—planning a program that you find in our teachers' outline. I read that a couple of years ago. As I recall it, it is about 140 pages. The teachers' outline devotes perhaps forty or fifty pages to arithmetic, to English, and to various other subjects, but when they reach the outline for health, they spread it on to the tune of 140 pages.

I offered to pay the superintendent of schools for the outline, for any teacher. It cost sixty cents. I offered to pay for the entire outline if the first-grade teacher would read the health outline—get what I mean? I didn't have to pay for one. (Laughter) That was several years ago. I would hate to make that offer today because I believe they would take me up on it.

Miss Daniel has pointed out very well how much the nurses need the coöperation of the health officer in planning their programs in the schools and in their fields. I think too often we leave that to the nurses to work out themselves. I think too often we feel like this: "Well, that is the public health nursing end of it; let them go on with it." I think it would be well if the nurse and the health officer would get together every few days and discuss their program and plan their work. I think the nurse would appreciate it a great deal more than you think.

Our study made by the public health service a couple of years ago was quite lengthy, extending over a period of a year. It was a lot of work for us. After we got into it we found out that we were being used as guinea pigs to make a study. (Laughter) The study was for the purpose of planning health.

Dr. Mountain had in mind finding out what a community needed, and at the same time finding out what we were doing and how well the people liked it. He didn't study us alone, he studied all the agencies that we contacted. He studied the community from the standpoint of determining what we were doing through our records. He studied the community from the standpoint of how well they appreciated our work or were interested in our work, by making a survey in the community, a house to house canvass, with a questionnaire of something like fifty or seventy-five questions—sort of putting us on the spot or weighing us as far as public sentiment or public opinion went.

The report of this study hasn't been completed yet. We still have the privilege of helping them fix a budget each year to carry along several members of their personnel in Washington who are still working on this study. I don't know what the final analysis will be. I have no idea. I was interested to know that we contacted with something like two-thirds of our population in the course of a year. We have about 47,000 people outside of the city, and at least two-thirds of those people were touched by the health department during the course of one year. There were 60,000 services rendered. It averaged a little more than two services to each individual contact.

I don't think Dr. Mountain expected that. I didn't. I had no idea that we were touching that many people. The reason I think he didn't have any such idea is that he sent two clerks and a couple of supervisors down to do the work, but before he went very far, he had four clerks. He accused the two that he sent down of loafing, so he sent someone down to check on them, and the one who came down to check found her services very much needed. He had to employ a fourth one.

We got one thing out of the study that I think will be of lasting benefit to us. They gave us a lot of records to keep, a lot that didn't mean anything to us, a lot that we weren't even interested in because we didn't hope to get anything out of them as far as we were concerned, personally, but it was a lot of bookkeeping for the nurses and for the health officer and for the sanitary officer and everyone else. After we had kept these records for a year we heaved a deep sigh of relief when the day came for that study to close, so we could change our record forms to a simpler type.

I believe that records were worth keeping. I believe that the complicated records that he made us keep were very much worthwhile to us, because it stimulated work; it was sort of a check as to who was working and who wasn't working. It was a check on time; it was a check on activities and contacts. It also equalized the amount of work being done in the department by the different employees. In a group of ten or twelve people naturally there is going to be a lazy one, and that one manages to connive around and find the easy job. That sort of thing will show up. It does equalize the work in the department. It shows who is carrying the heavy load and who is carrying the lighter load.

I am pleased with record keeping and I think it is very worthwhile. I was glad to hear the family folder mentioned this morning, even though it was condemned. We are thinking in terms of the family folder and if we ever get acquainted with it I think we will install it. You can put anything in it that you want to, you know. It consists of two sheets of paper between which you can put any amount of information. You can make it simple or you can make it complicated. I don't think it would be practical to put every call you make on the family folder. I don't think that for a minute, but there are cases that we follow along for a little while, of which we could keep a more intelligent history in a family folder than in any other way.

I have enjoyed the meeting today a great deal, and you see the trend: Health planning. I think it has been a splendid program all through. (Applause)

CHAIRMAN MCGEACHY: Is there any further discussion?

I would like to tender the privilege of the floor to all nurses who are present if they want to discuss the paper or ask Miss Daniel any questions. We will be glad to have them do so, but please make it as concise as you can.

Miss Grace McDaniel (Cherokee): Mr. President, I am wondering if, in swinging so completely to a generalized program for nurses—and we are getting into social service problems, all type of problems that we contact in the home; whether you have the family folder or not you keep it in mind—we are not forgetting that there are some very specialized services that probably all nurses have to stress a little more.

I am wondering if we couldn't get at the problem by instituting meetings at regular intervals at which time specialists could come to us with the newest and best information for our help in carrying out a better generalized program.

Chairman McGeachy: Is there any further discussion?

Miss Bailey (Supervisor of Asheville Public Health Nurses): There are one or two points in Miss Daniel's paper that I would like to stress. I hope the paper will have your earnest consideration, because it is so very well founded.

First, as to the point she brought out about less expense to the department in a generalized program: We take that for granted; we know it is true, those of us who have tried it. Besides that, there is less confusion to the home because of the fact that one nurse comes in to give the instruction regarding various health matters. That is a great advantage.

In addition to that, the nurse who is preparing for general public health work, besides being a better prepared person, is not so apt to tire of her own work. Her program is varied. And we all know what it means when our mental processes have to stick on one subject for too long a time. It increases the value of the nurse to herself and the community.

So far as the supervisor is concerned, it certainly is easier for her to give an entire general staff instruction. It is quicker than it is for her to take one nurse at a time and give her special instruction. That is another decided advantage for the general program. It is less expensive that way.

Somebody mentioned the family folder, I don't remember whether that was in Miss Daniel's paper or in someone else's, but for general work it certainly is helpful. You have just a summary, perhaps no more than a diagnosis, or every case that has been carried in that family, so that for a general public health program it is very helpful. The nurse doesn't go in on a new case without knowing what has been the history of the family before.

The number of families and people which each nurse is supposed to carry was mentioned in Miss Daniel's paper. You can see for yourselves that those nurses are going to have to do group teaching or they can't possibly reach that number of people. That is another reason for being teachers—general public health teachers—and it is another reason for their being well prepared for group teaching, which is a very different thing than instructing one person at a time.

The last thing I would like to mention is the percentage of work that is supposed to be home visiting. A good number of departments call for at least fifty per cent of the work being home instruction. That doesn't have to be actually in the home, but it means instruction to the families as a whole. And if the nurse is prepared to talk on various subjects, we can all see how much quicker she can reach all phases of the work if she does a good percentage of it in group teaching in these home groups.

CHAIRMAN MCGEACHY: Is there any further discussion?

If not, I am going to ask Miss Daniel to close the discussion.

MISS DANIEL: I think Miss Bailey's point was well brought out when she said that we must not lose the stimulation that we get from the specialized field of public health. I worked three and a half years in the field demonstration for the students for Columbia University, at the East Harlem Nursing and Health Service. It is situated on the upper East Side of New York. They have a staff of sixteen workers, sixteen public health nurses, and they have specialized supervisors.

I believe we had eight supervisors, three of whom were not even nurses; one was a social worker, one was a nutritionist, and the other a parent education instructor. There is no question about the special stimulation that you get from specialized supervisors.

However, in the rural field we have to consider economy and I believe the generalized nurse cannot be emphasized too much. We must go back to the economical method of work and we can get our stimulation from special reading, from speakers who are specialized in their fields, in helping us with our program planning. (Applause)

CHAIRMAN MCGEACHY: I have been asked to make the following announcement.

CHAIRMAN MCGEACHY: The time has come for the appointment of committees.

I want to appoint as the Nominating Committee Doctors Bulla, Morris and Harding.

Resolutions Committee: Doctors Carlton, Epperson and Sisk.

If there are any resolutions that any of you would like to have considered by the Resolutions Committee, hand them in to the Chairman, Doctor Carlton, as soon as you can, because according to the program they are supposed to report this afternoon at four-thirty. We may carry that over to the dinner session though because it looks to me as if they will have to hurry to get their report ready by that time.

I think we should take some recognition of those members of our association who have resigned. Fortunately we have had no deaths during the year that I know of, but we have lost two or three prominent members by resignation, and I think the Resolutions Committee would do well to consider that.

Dr. A. H. Elliott (Wilmington): I want to ask Doctors Hudson, Richardson and Williamson to serve on the Committee for the President's address.

Chairman McGeachy: What do you all think of changing the meeting hour this afternoon to one-thirty? Could you all get back at one-thirty?

. . . There was discussion about setting the time forward for the meetings. . .

Chairman McGeachy: We will adjourn now until two o'clock.

. . . The session thereupon adjourned at twelve-twenty o'clock. . .

MONDAY AFTERNOON SESSION

May 4, 1936

The session convened at two-fifteen o'clock, Chairman McGeachy presiding.

Chairman McGeachy: The first paper on the afternoon's program "Poliomyelitis and the Public," by Dr. Bulla, Health Officer of Wake County.

. . . Dr. A. C. Bulla (Raleigh) presented his prepared paper. . . (Applause)

POLIOMYELITIS AND THE PUBLIC

By A. C. Bulla, M.D., Health Officer, Raleigh

On May 7th last year we had what later proved to be the beginning of an unusual experience. In one of the best elementary schools in Raleigh, which had an average attendance of 550 children, just one week before the last day of school, a child was absent due to illness. Three days later, and just three days before the school was to close, a diagnosis of poliomyelitis was made. After a conference with the superintendent of schools it was decided that since the school would soon be closed, the children having already completed their work and promoted, but little would be accomplished by keeping the children in school. As an extra precautionary measure, the room the child attended was closed and the children sent home with a statement that they had been exposed to a case of poliomyelitis. This act within itself might have caused some fear in the community, because one would not be justified ordinarily to close a school or a room just because there happened to develop one case of a communicable disease. The very fact that this was done emphasized in the public's mind the importance of controlling, so far as possible, this dangerous crippling disease. This, coupled with the fact that the case happened to be the daughter of a reporter on a leading newspaper with a wide circulation, caused perhaps more publicity than would ordinarily have been given to one case of poliomyelitis developing, exposing forty children or more directly or indirectly. Thus, was the beginning of an epidemic of poliomyelitis in the eastern and piedmont sections of the State.

A few days later, in another part of the city, a second case was reported. And then the third and the fourth, and so on until it was apparent to all of us that we were at the beginning of an epidemic, the extent of which no one would hazard a guess. Conferences were held with local pediatricians and State Board of Health officials, who were in almost daily communication with the best authorities of the United States Public Health Service on poliomyelitis to formulate and make public the best precautionary measures possible. After discussing the value and use, if any, of the Park-Brodie and Kolmer vaccines, convalescent serum, whole blood, we would, in addition to the usual method of handling reported cases and contacts, advise the public, and especially that age group under fifteen, to voluntarily stay away from public meetings and public gatherings of all kinds, so far as possible.

The Board of Health did not think it wise, under existing conditions, nor was it recommended that any control measure be enacted into law closing swimming pools, picture shows, summer camps, Sunday schools, and other public places, or to limit the attendance to such places, but it did advise very strongly against the public attending such places, and especially children under fifteen years of age. The advice, I think, was just as effective as any law would have been. There was perhaps a sense of fear attached to the public's action in following advice of the health authorities, but I like to feel that it was a sense of duty and not a sense of fear.

Some of our people gathered up their young and departed to parts unknown; others would have done so perhaps if they could have found places within reasonable distance to stop; others resorted to questionable vaccines for protection. But it was not long until the public felt that Raleigh and Wake County were as safe places as other parts of the State and other states.

I think it would be fair for me to say that only 55 of the 675 cases reported to the State Board of Health were reported from Wake County. But there was a general impression in some parts of this State, and in practically all of the adjoining states, if inquiries can be taken as an index, that the Capitol City was the only place where cases were reported. This can easily be understood, since the State Board of Health is located there and all of the one hundred quarantine officers in the same number of counties report all cases to it. It is perfectly reasonable for people in other parts of this State and in other states who were not familiar with actual existing conditions to misunderstand the whole situation and reach, as many of them did, erroneous conclusions about a condition, which in itself was not as bad as reported to be. I think, as I will point out later, the people living in our resorts, from the mountains to the sea, became unduly alarmed and reached very definite conclusions about a situation which we knew but little about, so far as the actual number of cases in this and other states.

Wake County, including the City of Raleigh, has a population of 100,000; 40,000 in the city and 60,000 in the county. Of the total population about five-eighths, or 62,500, are white, and three-eighths, or 37,500, are colored. From May 7th to August 10th we had 55 cases reported and 7 deaths. There were 17 cases in the city and 38 in the county; an attack rate of 1 to 2,353 and 1 to 1,576, respectively. The attack rate in the white population was 1 to 1,524, and in the colored population 1 to 2,500. The youngest case reported was five months and the oldest, thirty years. The average age for both city and county was seven years. It was slightly lower in the city than in the county. Only cases showing very definite symptoms of paralysis were reported.

The public, through all these years, from the scientific discoveries of Pasteur, Koch, and others, down to the present time, has not very well, for some unknown reason, understood the many ways, avenues, and vehicles through which communicable diseases may be transmitted. Especially is this true of some of the communicable diseases like poliomyelitis, diphtheria, and scarlet fever, when sporadic cases develop in a community. We can, I think, prove to our own satisfaction, very definitely, by epidemiological investigation, how measles, whooping cough, and some of the other communicable diseases, spread from one susceptible person to another by direct and indirect contact, and how they spread from one community to another. Not a very difficult thing at all. In fact, most of us here have had some experience in trying to stop epidemics of measles and whooping cough by quarantining cases and susceptible contacts. The quarantine measures are good as far as they go, but they don't go far enough, and therefore are not effective in all instances in controlling or preventing epidemics.

One of the mysteries of poliomyelitis is the frequency with which isolated cases develop without any possible way of knowing or ascertaining the source of infection. It is only possible in a very few instances, in several hundred cases, to trace by epidemiological investigation one case to another. It happened only in one instance in our 55 cases. A secondary case developed in the same home within ten days from the onset of the first case. We had two other cases to develop on the same street in adjoining houses, within an interval of about a month. If we put the incubatior period at fourteen days, this could not be classed as a secondary case although in my opinion it was.

We know the infecting virus comes from cases recognized or unrecognized, or from carriers. That when cases begin to develop miles apart simultaneously, we must admit that the virus is widespread and that the most susceptible persons, when sufficiently exposed, develop the disease. There is no doubt in my mind, after talking to a number of physicians who reported cases, and who saw other children with like symptoms, but no paralysis, some in the same families where there was a case, that the reported cases were not a reliable index to the actual number of cases in

Wake County. I think I am within reasonable limits to assume that for each reported case we had ten, perhaps more, unrecognized and unreported cases, or at least 550 cases in Wake County. It is believed by many physicians that the abortive type is very common, manifesting itself during epidemics by such minor symptoms as fever, headache, and vomiting. If this be true, then we must further assume that quarantine of a few reported cases accomplishes but little in the way of control or protecting the public against infection.

Without any laboratory or research work being done to prove or disprove this statement, I think we can assume that the infecting virus, causing one case in 1500 or 2500 people, and in most cases only a mild degree of paralysis, in a very small percentage of the cases, was not a very malignant virus, or if it was, the relative immunity that existed was an important factor in resisting the infection which was widespread. Before any system of control can be made effective, we must know more about the infecting virus. What factors are associated with it when harbored by people or when transmitted by some vehicle, to cause it to change, if it does, from a mild to a virulent form, or from a virulent to a mild form. We know that a malignant virus under like conditions has greater power to infect exposed persons than the mild. Immunity, suspectibility, virulence, massive infection, mutation, explains perhaps why some cases are completely paralyzed, others with only a mild type of paralysis, and others not at all.

Brodie says, "Poliomyelitis can only be controlled and prevented by a safe and effective active immunization of the susceptible group, offers the most hopeful means of controlling it, especially if immunity can be produced rapidly." This statement of his has been true of other communicable diseases, such as smallpox, diphtheria, scarlet fever, cholera, hydrophobia, and to some extent typhoid fever, whooping cough, measles, and others, and no doubt it will be true of poliomyelitis. Practically all that has been accomplished in the last fifty years in preventing and controlling diseases has been the result of vaccines and sera properly administered, the application of sanitary science which has made sanitary living possible, for every home; a safe water supply, some approved type of sewage disposal, safe wholesome food, and screens to keep out flies and other insects.

When the public better understands the value of all of these protective measures and demands their universal application, to prevent sickness and suffering, to promote health and happiness, to strengthen our sense of decency and cleanliness, then, and not until then, wlil we realize our ultimate goal in preventing, controlling, and eradicating communicable diseases. Then life in infancy and youth will be made safer, happier, and more vigorous; crippling and deformities will be less frequent; decay will be less rapid; and death more remote.

CHAIRMAN MCGEACHY: Following the example of Major Bowes in his Amateur Hour, when he introduces distinguished guests, I want Dr. Hayne, Health Officer of South Carolina, to stand up and let us see him. (Applause)

Dr. Hayne, I want you to understand you have the privilege of the floor for any discussion.

Dr. Knox will lead the discussion on this paper.

DISCUSSION

DR. J. C. KNOX (Raleigh): Mr. President, the reaction of a people to a different situation is varied. We found that that was true in North Carolina last year when we had our first epidemic of poliomyelitis.

There is a tendency, of course, for people to run away from difficult situations, and we had that very well demonstrated last year. People left North Carolina and went elsewhere, to try to get away from poliomyelitis.

We were confronted with quite a task. First of all, because we do not know a great deal about poliomyelitis. In other words, there is a great deal yet to be learned. Then, there was the fact that we could not tell people specifically the cause of the disease, where it would appear next, or to what extent it might spread. That left them in quite a quandary, because we were supposed to know more about it than anyone else. And we didn't have much to offer. But we find that the public oftentimes does not respond very well to the information they have about a situation or a condition such as we had last year.

The method that we employed in trying to allay the fears of the public and control the situation was chiefly advice, advice based on the knowledge that we have of the disease. We did not advise anything—any action—that was based upon fancy or theory, and we tried to stick to the facts as they were known at that time. Some of the methods we employed may turn out to be rather poor methods of control. That remains to be seen. But the reaction, I say, varies.

In certain sections of the State we had laws or regulations passed by the local authorities prohibiting public gatherings of any sort. There were others that advised against gatherings. Others remained wide open, so to speak, and allowed any gatherings that they desired to have.

That all occurred in North Carolina as a reaction to the situation at that time.

But you can understand the confusion that might occur in a community when the medical profession and the public health authorities have so little to offer in the way of positive control measures. People want to do something definite to control the situation, and we didn't have it. For that reason, we had the confusion that did occur.

If the situation were to arise again in the next few years, we would probably have to go through the same thing, we would have the same

condition to contend with, unless, of course, our knowledge were greatly supplemented in the meantime.

People have become vaccine-conscious. That was demonstrated last year. They wanted some vaccine that would protect their children, and the State Board of Health did not advise the use of these vaccines. However, there was a considerable amount of vaccine used in the State, used chiefly by private physicians. But we did have one demonstration put on, more or less under the sponsorship of local health departments, relative to the use of the vaccine in the field, in an attempt to determine whether or not there was any value to it. The report of that work will come out later, and those of you who get opportunity to read that report I am sure will find it interesting.

The only way that we can get people to act intelligently and to use the information that they have—of course, this goes back to the general theme of the discussion this morning—is through public health education. Unless we have that, we can expect people to act hurriedly and in a hysterical manner. Until we can educate them, we will have this same condition to contend with year in and year out. (Applause)

CHAIRMAN MCGEACHY: Is there any further discussion? This is a mighty interesting problem.

If there is no further discussion, Dr. Bulla, will you close?

DR. BULLA: I have nothing further to say, Mr. Chairman.

CHAIRMAN MCGEACHY: The next paper is, "Social Security and the Development of Public Health Work in North Carolina," by Dr. Fox, of the State Board of Health. (Applause)

DR. R. E. FOX (Raleigh): Mr. President, Ladies and Gentlemen: Dr. Hege in discussing one of the papers this morning said that this meeting was somewhat of a symposium on program planning. I agree with him, in regard to some of the papers, particularly those that have been, or may be, presented by some members of the State Board of Health or the staff of the State Board of Health, rather, the Public Health Service, or otherwise, because those of us who have had the privilege of attending —both last year and again this year—the meeting of the Surgeon-General of the Public Health Service with the State and Territorial Health Officers have been impressed with the magnitude of the problem that is confronting us in administering the Social Security program, particularly the public health features of that program.

Hence, my reason for selecting this subject today, in order that we may pass onto you some of these problems, that you may realize the situation that is confronting us, and that you can help us in their solution.

. . . Dr. Fox presented his prepared paper. . . (Applause)

SOCIAL SECURITY AND THE DEVELOPMENT OF PUBLIC HEALTH WORK IN NORTH CAROLINA

By R. E. Fox, Director, Division of County Health Work,
N. C. State Board of Health

The protection and promotion of the public health has long been recognized as a responsibility of government. In the United States, however, this responsibility has not generally been discharged in a systematic and adequate manner as have other functions of government such as the protection of property, the provision of means of communication, or the administration of justice and education. Furthermore, there is a marked inequality in the health service now being rendered to different communities, which results in great differences of opportunity for citizens to acquire and maintain health. This condition has been brought about by:

1. Lack of adequate State and local services for organized health protection,
2. Lack of appreciation and understanding on the part of the citizens of the measures necessary to preserve and promote individual health, and
3. Lack of ability of citizens and communities unaided to secure needed preventive services.

It is the aim of the Social Security Act, among other purposes, to stimulate a comprehensive, nation-wide program of public health, financially and technically aided by the Federal government, but supported, so far as possible, and administered by State and local communities.

In order to carry out the provisions of this Act, money has been appropriated by Congress for aid to the States and has been made available for the following purposes:

1. Aid to State Health Departments for strengthening the service divisions and providing reasonably adequate facilities especially for the promotion and administrative guidance of full-time city, county, and district health service,
2. Aid through the State Health Departments for the development of city, county, and district health departments,
3. Training of public health personnel.

It has been made clear that Federal grants in aid to existing State or local health projects will be supplemental to funds now being expended, and in no case may such grants be used to replace existing State or local appropriations to such projects for the purpose of relieving State or local authorities from expenditures now being made.

The North Carolina State Board of Health has received funds from two Federal agencies, the United States Public Health Service of the Treasury Department and the Children's Bureau of the United States Department of Labor. The funds allocated through the Public Health

Service are for the purposes as outlined above. Those allocated through the Children's Bureau are: first, for the purpose of enabling each State to extend and improve services for promoting the health of mothers and children; and second, for the purpose of enabling each State to extend and improve services for crippled children. This entire program is being administered by the State Board of Health through its various divisions.

In regard to maternal and child health service, the program provides for coöperation with medical, nursing, dental, welfare, and other groups to improve methods of administration in care for expectant mothers, for women in confinement, infant welfare, and child welfare up to twenty-one years of age. A major portion of this work must be done through organized local health units and coöperating agencies.

The main objectives in regard to crippled children are to locate and register all crippled children in the State, to effect treatment as soon as possible, to establish a follow-up system and contact these children until they are twenty-one years of age. This program will be conducted through clinics in the North Carolina Orthopedic Hospital and selected general hospitals in the State. The program includes local vocational-rehabilitation service in providing training facilities for the handicapped, and coöperative relationships with all other official and private agencies of the State and with local units involved in any type of service for crippled children in order that all available facilities may be coördinated.

With the allocation of funds provided through the Social Security Act, it has been possible for us to expand the local health units of the State until they have a minimum personnel of one full-time health officer, two nurses, a sanitary officer, one clerk, and a dental program in those units meeting the qualifications required for participation in these funds. The personnel employed in these units must meet the standards of qualifications established and recommended by the Conference of State and Territorial Health Officers.

The State and Territorial Health Officers realized that the success of the Social Security Act in the field of public health depends upon the availability and employment of competent and professionally trained personnel, and funds were set aside for such purposes. Training facilities have been provided for the training of health officers, public health nurses, and sanitary officers.

More than four years ago, the North Carolina State Board of Health realized this necessity and required such training of personnel in local health units before allocating funds for the support of local health departments. In September 1934 arrangements were made at the University of North Carolina for the training of health officers. Two such courses were conducted during the academic year 1934-35.

Realizing that with the development of the Social Security program additional training facilities would be needed, the University of North Carolina, working in coöperation with the North Carolina State Board of

Health and the United States Public Health Service, established a Division of Public Health in the Medical School of the University in January of this year.

In viewing the public health field for a man to direct this work, a careful survey was made. It was realized by those responsible for this undertaking that this was a pioneer piece of work for this section of our country, and that the best man available was the person we desired. Therefore, the University turned to the pioneeer man in public health education, the one who has done more than any other in developing our knowledge and conception of public health work. This man was none other than Milton J. Rosenau, who organized the first School of Public Health in the United States. Dr. Rosenau came to the University with the same ideals that carried him into his first venture in public health educational work, which was started as a joint enterprise by Harvard University and the Massachusetts Institute of Technology many years ago. I feel that we are not boasting when we say we are sure Dr. Rosenau will perform a service for this section of our country in his new undertaking at the University of North Carolina that bids fair to surpass his original venture in public health work by reason of the fact that his pioneer work has blazed a trail and created followers who will lend him every assistance in placing public health in this area on a sounder, firmer basis.

Since the new Division was created, two courses have been offered at the University of North Carolina. In the first, four health officers from this State were trained; in the second, which began on March 23rd, a total of fifty-one health officers and sanitation personnel are being trained. These trainees are enrolled from the states of Delaware, West Virginia, Virginia, South Carolina, Georgia, Florida, and North Carolina. North Carolina has four health officer trainees and eleven sanitation personnel trainees enrolled in this course. It is my understanding that it is the plan to offer this three months' course at least twice a year.

It is the purpose of the State Board of Health to select for this course of training; first, an adequate number to supply trained personnel for the new positions created under the expanded program, and second, to ultimately give every public health worker in the State the opportunity of such a course of study. It is realized that this constitutes a long-range program, and will require several years for its completion. Many of you have already requested an opportunity for the personnel of your department to receive training. As rapidly as we have the funds and facilities available for granting these requests, this will be done. The method of selection of personnel now employed for training in the course has not thus far been determined. This is a policy which will rest with the State Board and the State Health Officer.

Facilities for the training of public health nurses have been arranged at George Peabody College for Teachers for white public health nurses, and at the St. Phillips Division of the Medical College of Virginia for the

training of colored public health nurses. A total of nineteen nurses are now being trained to fill new public health nursing positions.

With the expansion of local health service, as already outlined, it is realized that it is necessary for the State Board of Health to offer a more adequate consulting service to the local health units. It is realized that if we are to plan and coördinate this development along constructive lines, a representative type of consulting service must be provided. The plan as devised in North Carolina will provide a consultant in public health administration, a consultant in public health nursing, a consultant in sanitary engineering, and a consultant statistician. This consultant service will be available through the Division of County Health Work to local health units.

Many of you have raised the question as to the amount of financial aid which you may continue to expect from Federal sources. As all of you know, the Social Security program is planned by the Federal government on a permanent basis, and it is believed that the public health features of the Social Security program will continue on a permanent basis.

You, of course, realize that with only fifty-three counties in our State having full-time health service and forty-seven without any type of full-time health service, some of these forty-seven will desire to establish full-time health service within the near future. Since the amount of money which we are to receive from State and Federal sources is fixed for the next fiscal year, it may become necessary to reduce the appropriation to the present participating local health units in order that we may divide with our neighboring counties beginning on July 1, 1936. When the budget for the fiscal year is approved, there will be no reduction. It is not contemplated that this expansion of health service into new counties will call for more than a twenty per cent reduction in the Federal and State allotments to existing units. If each local health unit is to maintain the personnel as outlined in the budgets which have been submitted to you for the period February 1st to June 30th, it will be necessary for the local funds to be increased by the amount of the State and Federal decreases. You may be assured that it is our desire to allocate all of our funds each year in order that they may do the most good, and that the percentage decrease will be made as small as possible.

There is a provision in the laws and regulations governing the allocation of Social Security funds which provides that every state, including its political sub-divisions, must increase their appropriations each year in order to continue to hold Federal appropriations. The last figures which I have available for North Carolina show that in our local health units we were expending an average of twenty-six cents per capita. In our city departments, they were expending an average of fifty-five cents per capita. This, of course, does not include the amount which the State Board of Health was expending outside of its state subsidy to local health units, which would amount to approximately seven to eight cents per capita.

Therefore, we can all realize very readily that if we are to reach the goal which has been outlined by those students of public health who have in mind an adequate public health program, we must materially strengthen our State and local public health budgets

I feel some hesitancy in suggesting to this body an outline for improving the type of public health service. No doubt, our good friend, Dr. Ziegler, who is to follow me, can more adequately give you the proper conception of the health needs which we must attempt to meet. However, there are a few points which I feel should be brought to our attention for joint consideration.

Sometimes misunderstandings arise between the official health agencies and the practicing physicians. This is entirely unnecessary, but understandable. It has been due in a great part to a lack of consideration on the part of the health officer or members of his department for the viewpoint of the physician and a lack of understanding by the physicians of the purposes and objectives of the health department. One principle must be kept in mind—the fundamental purpose of both the physician and the health department is the same. We are striving for the better health, and thus greater happiness, of the community. The goal is the same though it is reached by different paths. The daily work of the physician covers the scope of activities which are related directly or indirectly to almost every part of the health department program. The health department makes many requests of the physicians. These requests are not unreasonable. They represent obligations which the physician assumes when he enters medical practice, and which should be performed as a public duty. The health department should make a fair exchange. It has much to offer the physicians, so that the final arrangement should be one of mutual assistance and mutual advantage. We, as public health workers, must strive to coöperate with local professions and show them where the health department is of definite assistance to the private practitioner.

Our public health program must be developed on a logical, workable basis. Greater use must be made of the vital statistics available in each local community. Our communicable disease control program must be directed toward the control of those diseases for which we have a control method. I feel that more time should be spent by all of us in epidemiological investigations.

For a number of years, we have relied on typhoid immunization to control typhoid fever, but little has been done to find the sources of the infection. We know that the human being is the source and the reservoir of typhoid infection. Too often in our investigations we trace the infection to the disease-carrying vehicle and become content with the situation when we have found the water supply polluted. I feel that this investigation should extend to ascertaining from whence this pollution arose. Many communities control typhoid fever through the control of typhoid carriers, but it is my impression that in this State we know very little about our

typhoid carrier problem. Please do not understand that I am advocating the discontinuance of immunization against typhoid fever, but I do know that experience has shown that typhoid fever can be controlled by sanitation and careful epidemiological studies with control measures thrown around the human reservoirs of this infection.

With the expansion of the public health work, I believe all of us can devote more attention to the subject of tuberculosis. The same is true of venereal diseases. Adequate programs for the control of these diseases should be developed in each local health service.

Maternal and child hygiene programs must be strengthened if we are to reduce our maternal and infant mortality rates. The school hygiene program is important, but I wonder if perhaps we are not spending more time on this particular program to the detriment of the maternity, infancy, and pre-school programs. As regards adult hygiene, it is not regarded as within the province of the health department to offer clinic service for routine physical examinations of adults. We should do everything possible to educate people concerning matters of personal hygiene and train them to recognize the early symptoms of degenerative diseases. We should urge all adults to have a regular physical check-up by their own physician.

In all of these services, efforts should be made to secure the coöperation of private physicians in assuming the responsibilities for the services enumerated. The modern pediatrician and obstetrician are rendering a distinct service in these fields. The health department should strive to bring about more of these services on the part of the private physician. It may be necessary for the health department to conduct centers to care for maternal, infant, and child hygiene services for the indigents in each community. It is advisable, of course, even in these centers to use as many of the local physicians as possible.

Public health administrators all over the country have realized for some time that probably the weakest link, generally speaking, in the local health unit has been the sanitation program. They feel that this has been brought about because of the type of personnel which has filled these positions in local health units. This is the reason facilities have been arranged for attempting to train sanitation personnel and to elevate the sanitary officer from a politician to a profession. When this is done, it is believed that better results will be accomplished in sanitation work. There are, of course, many outstanding accomplishments in local units performed by men who have never had any training, but they have developed their program by sheer native ability with the help of a good health officer. It is believed that even these men could have gone much further in developing local sanitation had they had the advantage of the theoretical training underlying the reasons for sanitation.

There may be a tendency on the part of the local sanitary officer to depend too much on the State sanitation personnel for the enforcement of certain of our public health rules and regulations. I wish to point out that

every local health department is a part of our public health family, and if we are to develop any of these programs, including sanitation, each department must assume the responsibility for seeing that the public health regulations are complied with in their local community. We are dependent upon the local units for the improvement of the public health in their area. The State Board can do no more than act in an advisory and consultative capacity.

As to the question of laboratory service, we should strive to have in each department, ultimately, a laboratory technician to perform those types of service of a public health nature which lend themselves to performance in small laboratories. In this way a more adequate service should be developed. Of course, it will still be necessary for us to have an adequate central laboratory for the entire State, but many of the routine tests can be done in local departmental laboratories.

I have attempted to sketch the picture of an enlarged public health program as visioned by the men with whom I have had contact in the last few years, who are striving to develop a more adequate public health service. Some of you may not agree with all that has been said, but I am asking you to study these matters carefully, and at all times feel free to offer constructive criticism. If we are to accomplish the protection of the public health, we must all work together in this common undertaking.

We must stand united in one common purpose, and that is to render an increasingly better type of public health service. Local and State appropriating bodies will not support something in which they are not thoroughly sold as to its value. The same is true of the Federal government, and I think all of us realize that if Congress is to continue the appropriations made available through the Social Security Act, we have an additional responsibility in convincing the members of our Congress that they have made a wise expenditure of funds. I am sure we all realize that the opportunity presented at this time is the most promising which we have ever had in the whole history of public health work, and that we are all one family in the responsibility for carrying on this undertaking along sane, constructive lines.

DISCUSSION

Chairman McGeachy: Dr. John H. Hamilton is scheduled to open the discussion on this paper. Is he is the room? I don't believe so.

The paper is open for general discussion now if anyone would like to discuss it. It is a very remarkable paper and a very worthy one, and I hope we will have plenty of discussion on it.

I might suggest that we have the next paper and then discuss them together. I think, to be honest with you, that is a better plan.

Some time ago I read in the "American Legion Monthly" a little joke that illustrated the humor and slang of the Army. It said that a sergeant was out on the edge of "no-man's land" and he heard a G. I. can coming

through the air. He didn't know where it was going to land, so he dived into a shell-hole. His head hit the stomach of a private who had already gotten into the shell-hole, and he said there wasn't a sound for a second or two, except the very labored breathing. Then the private said, "Sarg, is that you?"

The sergeant said, "This is me all right."

The private said, "Hot dog! I was just waiting for you to explode!" (Laughter)

We have been waiting, not to hear Dr. Ziegler explode, but to hear him expound. Dr. Ziegler will talk to us now on, "Determining Community Health Needs." (Applause)

Dr. M. V. Ziegler (Washington, D. C.): Mr. Chairman, with that kind of an introduction I want to paraphrase my remarks by saying it is certainly a pleasure to be back among you and to see so many faces that I was so intimately acquainted with during my four years of sojourn in the State. (Applause)

In connection with the paper that was just read, I don't know of any paper that I have heard recently concerning the various provisions of the Social Security Act that more clearly stated those provisions than the paper which you have just listened to by Dr. Fox. It indicates that in so far as North Carolina is concerned they have a very clear conception and understanding of the various provisions which the Federal Government has endeavored to make possible in promoting general health activities throughout the United States.

I was very much pleased to hear Dr. Fox touch on the question of training, and by noting the program I observe this is the Twenty-Sixth Annual Session of the Public Health Association, and those of you who are much older than some of us who are young in the service and in the career of public health are reminded, no doubt, that most of us came into the public health service as a career of service without any training. We have received our training in the field of experience, under a trial and error method.

But I want to remind you—and I am sure that you cherish the same view that I do—that in this question of the training of personnel for health work, it ought to be gratifying to you as it is to me to know that all of those who are going to follow in the future in public health work are entering a career of service—whether they are entering it as medical health officers, as directors of county health organizations or members of the staffs of state health departments, or as public health nurses, sanitary engineers, or in any of the various professional capacities—and provision has now been made, through these grants and aids to the various states, to provide for the professional training. And these men who are about to enter the service of the State are doing so in the fullest sense of what I mean by "career of service"—an opportunity to serve the State and to serve it in the field of public health.

The title of my subject this afternoon is, "Determining Community Health Needs."

Public responsibility for health service, as other public services, is founded on the principle that the common good is best served when organized society pools its resources and delegates authority to an agency to act for the group in providing required service beyond the resources of the individual, or when the authority vested in government must be invoked to control conditions prejudicial to the public good.

That is the principle upon which we have built our highways. That is the principle upon which we conduct our public education. It is for the common good, and in the public's interest.

There is a growing appreciation of the importance of public health service, and public responsibility for the health of the individual citizen. This health consciousness has been due in part to developing ways and means for providing social security.

As Dr. Fox remarked to me a minute ago, we have an unusual opportunity now, during the transformation, and recognizing human values today as we have never recognized them before the cause of public health is going forward in leaps and bounds.

The occurrence of a preventable disease in a family frequently so disturbs the social and economic balance of the family as to bring about economic insecurity.

It is recognized that a people cannot attain a high level of health where the standards of living afford nothing more than the essentials of life, namely, food, shelter, and clothing. Something more than the bare subsistence level is necessary in order to insure a varied diet, healthful housing, and medical care if security of social and financial position is to be maintained. The humanitarian, the relief administrator, and the social worker are all mindful of the value of health service, and the perplexing difficulties frequently encountered in localities where no part of the public revenues are expended for health service.

In many communities health service had its beginning in efforts to eliminate hookworm, malaria, or typhoid fever. From such special or single activity a more generalized health service developed.

The development of a community health service through a special interested group is not always successful in meeting the public health needs of the community, as frequently the group concerned only with one problem, such as public health nursing, tuberculosis, or infant and child welfare, feel that when such special health services are provided that the public health needs of the community have been satisfactorily met.

A public health program, to be effective, must be inclusive in type—a particular age group, sex, occupation, race, or social and economic status cannot be considered separately and apart from the general population. Public health problems will not be solved in limited or special health

programs without taking into account all factors involved in promoting the public health.

One central agency should administer the health work for a given jurisdiction. Where this is done opportunity is afforded for the development of a well-rounded service and in consequence efforts are made to include in the program the accepted services as listed in the appraisal form for rural health work.

How may the community health needs be determined?

In order to determine the community health needs, a critical study should be made of the morbidity and mortality reports.

Reference was made to that during the morning session by Dr. Allen when he indicated that we must carefully study the conditions which are causing or contributing to our mortality, and with a careful analysis of those fundamental factors, as Dr. Fox pointed out, and the statistics that are available to our health departments, we can determine the kinds of public health programs that are suited to our various needs.

Such study will give worthwhile information as to the general health needs of a community. In the evaluation of such statistics cognizance must be taken of the completeness of the data as well as the fluctuating incidence of communicable disease from year to year. (Epidemic years should be eliminated in determining the average health level of the community.)

Field studies reveal pertinent information concerning the sanitary condition and by judicious sampling generalization may be drawn as to the health needs.

Having determined the health needs, the next step is the selection of services to meet such need. Recognizing that there are limitations as to personnel and budget, it is evident that the selection of types of service and the emphasis to be placed on each must in turn be determined by the possible accomplishment in relation to expenditure of efforts and funds.

The mechanism through which health service is made available to the community is the health organization—therefore the type of organization in existence or to be established should be examined in the light of certain functional and administrative criteria.

First: The area to be served by a health organization should be a population unit with a definite and legal status.

Second: The limit of jurisdiction should be a political entity and a taxing unit.

Third: The health service should be a part of the governmental organization.

Fourth: The department should have ample funds to provide service of sufficient intensity to accomplish definite results.

Fifth: All public health workers serving the area should be a part of one organization.

Sixth: The basic personnel should be required to devote their full time to the work.

Just recently at a conference, Mr. President, of the state and territorial health officers with the Surgeon-General in Washington, a discussion took place between all the state officers attending the meeting on a question that seemed most academic, as to the value of a district health program against a county health program. I can only remind you that that discussion would not take place here in North Carolina, as to which type of service would be best suited, a district type of service or a county type of health service. Whatever the organization that is developed, it should cover a political jurisdiction.

Here in North Carolina, of the fifty-three counties that have been developed under local health service, the first thirty-seven counties were developed as separate, independent counties. The thirty-eighth county was a district which comprised Forsyth, Yadkin, and Stokes. Then the fortieth, forty-second, forty-third, and forty-fourth were again individual counties. The forty-fifth local health unit that was established in this State was a district service which comprised the counties of Haywood, Jackson, and Swain. Now we have developed county health service and district health service.

This question as to the virtue of a district health service versus a county plan is purely an academic one. It was rather astonishing to me that a matter of this kind should be discussed at a conference of a national character, and I just want to point out this one thing: that in the grouping of these counties into district service, the county remains intact. It is a political unit, and we group counties into districts to form a district health service, but the county is still a political unit, it is a unit of population, it is a taxing unit. And only through recognizing the existing governmental organization can we hope to get sufficient resources and to prorate the cost of a district health department.

So I predict, Dr. Fox, that in the further development of health service in the State of North Carolina, the fifty-fourth and fifty-fifth and fifty-sixth organizations will be district health services, which will include two or more counties, and that we will not discontinue the counties that are already established and divide those into districts. They will continue to operate as local health jurisdictions, but in further development of local health service it will be necessary for us to combine counties into districts. However, remember that we still maintain the county lines and the local political unit is the governmental organization.

After having determined the character of health program that we have in mind, it is still necessary to take stock or inventory.

PERIODIC EVALUATION

Finally, after having established an acceptable organization and a program of service is inaugurated, the work of the department should be constantly appraised as to unit costs and in terms of accomplishment.

Standards of service have been determined by competent authority. Repeated measurements of service by this standard indicate that adequacy of service is seldom attained when the budget is much less than $1.00 per capita.

Dr. Fox reminded you that the budget for local health service in some instances was twenty-four cents, in others it went up as high as seventy cents per capita, and also indicated that in the continuation and in the expansion of the service it will be necessary for the State and the local communities to increase the appropriation each year by at least ten per cent until we reach the point of one dollar per capita. Under the provisions of the Social Security Act, new funds must be made available each year for matching purposes until we reach one dollar per capita.

There are a number of local health departments throughout the United States that are now spending one dollar per capita. I say "a number." There are really very few.

The essential health services for any community should provide for the following items:

Safe Water: All dwellings should have a water supply which meets a reasonable standard of purity.

Safe methods of excreta disposal: All dwellings should be connected to a public sewer or be provided with other sanitary methods of disposal.

Safe milk supply: Milk should be obtained from healthy cows and should be produced under sanitary conditions and finally pasteurized.

Vital statistics: All births and deaths should be recorded and these data should be analyzed in order that the health officer may understand local public health problems with a view to guiding the future program.

Communicable disease: The health authorities should have knowledge of the presence of communicable diseases and the conditions under which they are occurring. Essential safeguards should be placed around sick individuals, and all children should be immunized against smallpox and diphtheria. Children and other groups of the population should be immunized against other diseases as indicated.

Tuberculosis: There should be a record of all cases and the physical status of contacts should be known. Facilities should include provision for diagnosis, home nursing, and hospital care for selected cases.

Venereal diseases: Facilities should be available for treatment, at least the more infectious individuals, and other measures should be instituted which will lessen exposure to infection.

Maternity hygiene: Expectant mothers should be under the supervision of a physician during pregnancy and should be visited by nurses periodically. If possible, the birth of the child should take place in a hospital. Under other circumstances, nurses should be available to assist physicians attending deliveries in the home. Such patients should have nursing service for several days following the birth of the child.

Child hygiene: The child from infancy on through school age should be seen from time to time by a physician, whether it be in the office of the physician, at a clinic, or in the school. Personnel and other facilities should be available to assist in carrying out the recommendations of the physician.

Laboratory: Provisions should be made where specimens can be examined to assist in the diagnosis and management of diseases of public health importance.

Special health services should include measures directed against cancer, heart disease, trachoma, malaria control, industrial hygiene, wherever and whenever applicable.

And it will be interesting to you, as a group, to know that your State Health Department has recently, under the provisions of the Social Security Act, made a definite forward step in the field of industrial hygiene. They have recognized the importance of hazardous occupations and the health hazards that the workers of this State are exposed to.

County health departments are not branch offices of the state health departments. The county health department is a separate and distinct entity established for the purpose of providing health service for the people living within the confines of the county.

I am very happy that that is the case, and by virtue of that fact, it will be impossible to sterilize the program of any health service in this State. The health service of the State, as was pointed out today, is made up of three local health jurisdictions, and while it is true there are certain items of service that are standardized, in each local health service the health officer and his staff will determine the content of the public health program that is best suited to the needs of that area.

State health departments exercise a limited supervision over the local health units, and render consultation service in the various health specialties.

I didn't know Dr. Fox was going to refer to that part, but he says that in the division of county health work, provision is made whereby there will be consultation service available to every local health service in this State, through the assistance of a public health nurse, a sanitary engineer, vital statistics, a specialist in child hygiene, and the whole gamut.

As the nurse who spoke to us this morning pointed out, it is very important that we have brought to us from time to time the specialist's viewpoint, even though he thinks, of course, his particular program is the most important of all programs.

The State's influence over the local health department in many instances is exercised through a system of subsidizing the local service, and through this method of systematizing of local service we can raise the standards of the service that is rendered.

The trend in this direction is increasing and will no doubt be stimulated by the availability of grants in aid from the Federal Government

to the states under the Social Security Act. All participation on the part of the Federal Government with local health departments is through and with the state health departments. Where the state finances and directs all local health service the counties are used only as administrative areas. Under such a system of control it is possible to shape the public health map into districts irrespective of county lines. (Personally, I feel that the districts should be shaped so as to include the county as a unit and as a part of the district.) Districts can then be determined entirely on the basis of a unit of population, metropolitan districts, geographical or trade areas.

In the health department should be lodged those activities affecting health that have been accepted as a public responsibility.

The type of public health organization which a community maintains together with the per capita expenditure largely determines the content of the program, and the character of the service.

If a community wishes to take full advantage of available information regarding the prevention of disease and the promotion of health, it can best do so by and through a full-time county or district health department. (Applause)

CHAIRMAN MCGEACHY: Sitting back of Dr. Ziegler here while he was reading that paper reminded me that some years ago I had the privilege of introducing him at a gathering of teachers of eastern Carolina, to make an address on milk for health. I told them that I thought he could make his speech in one sentence: "I drank milk while I was growing." I still think it would be a good speech. (Laughter)

Are there any questions you would like to ask Dr. Ziegler? You have a chance at him now. Let's get all the money we can out of him before July 1st. (Laughter)

Is there any discussion?

DR. E. R. HARDIN (Lumberton): That was a splendid paper and I agree thoroughly with everything Dr. Ziegler said in regard to the county health unit as a jurisdiction. I think that is right and that is where it should remain.

As to consultant service, he mentioned the fact that there would be one consultant service from the State Board of Health and vital statistics, maternity and infant hygiene, and one or two other things.

It has seemed to me for quite a long while that we are considerably weak, from the standpoint of public health education, in this State. I think that applies to most of our county health units, with the exception of a few of the larger city units. The average county health officer does not have much time to give to that phase of the work which we all consider so important, and I noticed that considerable emphasis was given to that in all the discussions this morning—the importance of the educational program in a county health unit.

As I say, I think that we are all weak on that phase of the county health work, and the average health officer has little time to give to it.

Perhaps many of us are weak in ability to really sell our service to the people as we should, to make them really appreciate the work that we are doing.

If we had a consultant who was an expert in publicity—perhaps he might do some of this other consultant service, too—who could come to a department and go through the work that is being done, and help prepare publicity on the various phases of work that have been done, and present that in the local papers to our own people, in the proper light, I think it would go a long way towards helping us get these increases in funds that have been spoken of here from year to year, and build stronger health departments.

We certainly need some help in that direction, I think. (Applause)

CHAIRMAN MCGEACHY: I am going to recognize Dr. Cooper for just a minute.

DR. G. M. COOPER (Raleigh): Mr. Chairman, I just asked for the privilege of the floor for Dr. McCown, of the Children's Bureau, Washington.

CHAIRMAN MCGEACHY: We shall be glad to hear from Dr. McCown.

DR. ALBERT MCCOWN (Washington, D. C.): It is a great pleasure to be here with you today.

As I have sat here and listened to these very interesting papers and discussions, the primary thought that has been in my mind was that in this whole health work, we appear to be getting together. I notice that representatives of official government organizations—like Dr. Ziegler of the United States Public Health Service—representatives of your State Health Department, and of your Public Health Association are all meeting in conjunction with the convention of the Medical Society of the State of North Carolina.

In private practice for fourteen years in a distant state, I often felt that the integration of the activities of the medical profession and the official health organizations wasn't particularly close, but in the last eight months as I have gone around the country meeting the state health departments, meeting with state medical societies, and county medical societies, it has seemed to me that there is a new spirit abroad.

If we health people are the interpreters of health measures, in like manner, we are absolutely dependent, as has been said here today, on the local practitioners for the effective carrying out of the services, whether they be to mothers and children, or whether they be to adults. And it seems to me it is a very happy omen that we are all falling in step and going on together. (Applause)

CHAIRMAN MCGEACHY: Is there any further discussion?

DR. N. T. ENNETT (Greenville): I agree with Dr. Hardin that we should try to get a little more publicity in regard to our public health work.

The newspapers will use news, but they determine just what is news, meaning of course they turn down much of the matter that the health officer would like for them to use.

I imagine that the publicity efforts of the health work will have to be subsidized. That is, we will have to be in position eventually to pay the newspapers to carry some of the publicity that will be helpful in getting over our health program.

But we needn't wait until we get the money to pay the newspaper people. There are a few other methods that we might utilize to advantage. One is to get yourself invited to address as many organizations as your—I was going to say "self-respect," but that isn't the right word; what is the word?—pride will permit you to.

The women's clubs are, as a rule, interested in health work. Of course, the parent-teacher associations think of that as a major part of their effort in connection with the schools.

As a rule, you can get before the civic clubs, (most of them are interested in health work) if you don't talk very long.

Then when it comes to the matter of some of the less important organizations, you can talk to the Boy Scouts, you can talk to the 4-H Clubs, you can talk to the Home Demonstration Agent Clubs. Those are some of the organizations already set up in practically every community which you may utilize as avenues through which you can get over some public health education propaganda.

Dr. Woodard (Rocky Mount): I agree only in part with the last two speakers.

The gentleman from the Children's Bureau has had more experience than I have had, but it seems to me that this educational program should be divided into three parts.

The first part should direct its emphasis towards the doctors in the profession, those who attend the county medical society meetings. They are the ones who need education—I mean in this work.

The second group are those doctors who don't go to county medical society meetings. They are the ones who know absolutely too little about public health.

The third group are the laymen.

That has been my experience. (Laughter and applause)

Dr. James A. Hayne (Columbia, S. C.): You know, when a man gets to my time of life there is one kind of music that he considers worth listening to and that is the sound of his own voice. (Laughter) It is perfectly delightful to listen to those resonant sounds that come forth.

I have listened with a great deal of interest to these discussions. You see, I have been listening to these discussions for—well, since the memory of man runneth not further back. (Laughter) And I have been striving

very hard to get something that is new and inspiring out of these discussions that I have been listening to.

The only thing in these discussions now that is newer and more inspiring than I have heard for the last twenty-five years is that there isn't going to be just as much lack of money as there has been for the last twenty-six years. (Laughter)

When you come down to the question of how public health should be administered, you are confronted at once with the two theories of government. Of course, speaking up here in North Carolina, which believes in local self-government, I have often discussed this with my friend, Watson Rankin, and the pro's and con's of this discussion will continue as long as the United States Government continues.

Many years ago—very many years ago—when I went to college, I was taught what the Democratic party was. Of course, it isn't the Democratic party of the present day. The then Democratic party believed firmly and positively in local self-government and a strict construction of the Constitution. (Laughter)

The Republican party at that time believed in a loose construction of the Constitution and a central administration of government in Washington.

How far those two ideas of the Democrats and the Republicans have pulled apart at the present time, I leave it to the audience to decide. (Laughter)

The same principles apply when you come to study public health work: Shall we have a strong central administration in our capital with the state government or the state public health work under the supreme command of the state health officer and the state board of health, or shall we have a number of organizations all over the state, each one a government in itself, by itself, and for itself, and not giving a continental about the county next door to it?

Those two principles have to be decided and are being decided very rapidly.

I can remember when the summum bonum of public health work was to have a whole-time health officer.

Well, we got the whole-time county health officer.

Then we found we had to have a whole-time county health nurse and a whole-time county sanitarian and a whole-time clerk and a whole-time anything else that we could get hold of with the money available. And the thing has expanded and expanded until he—Dr. Ziegler—says we have to have a dollar per capita.

That means $1,800,000 from the State of South Carolina, (I don't know how much it is for North Carolina) that has to be appropriated before we can begin to think we are doing public health work. The present appropriation in South Carolina is about twenty cents per capita, and we

are doing fairly good health work in South Carolina, reasonable health work. That is, our death rate—in spite of the fact that we have a lot of niggers in our population, more niggers than white—is a little lower than it is in Massachusetts, a little lower than it is in Connecticut, or New York, or Rhode Island, or Vermont, or any of the so-called civilized, educated states. (Laughter) Of course, we are retrogressive, we are backward, we are ignorant, we are this, that and the other, but we have those figures to show.

One factor that contributes to that may be that one has such a desire to live when he is in South Carolina and North Carolina (laughter), that just that desire to live keeps him going in spite of all the handicaps that he has. When a person has to live in Massachusetts, or Vermont or New York, the desire isn't quite as great. That may be the reason for our lower death rate. I don't know. I am just illustrating this. (Laughter)

It does seem to me that we have at least reached the goal which we have all striven for. We are going to be given the money. We have the money, and we have a tremendous responsibility.

We talk a great deal about what we have accomplished in county health work, and yet when we draw the deadly parallel between those states that haven't county health departments and those that have, the advantage is not so great to those that have county health departments.

It would seem to me that perhaps we ought to take stock of ourselves, and the one criterion that I touch on, that I use, is this: that we haven't reduced the maternal mortality since 1915 anywhere in the United States, and that is something we can do. But we haven't.

We have, or somebody has, succeeded in lowering the general death rate, but when it comes to things like that we haven't done much and we have a splendid opportunity to do something there.

I want to thank you for the pleasure of being here. My remarks are rather incoherent this afternoon, because I was at the Kentucky Derby on Saturday (laughter) and unfortunately the horse that I had selected when I left home, through some terrible condition or circumstance, was thrown to his knees as he started and there I wept and shed tears over the fact that Brevity was not the soul of wit. (Laughter and applause)

Chairman McGeachy: Is there any further discussion? If not, I will call on Dr. Ziegler to close.

Dr. Ziegler: There is just one thing I want to add to what Dr. Hayne has said, and that is whether we have made much progress, or not, by comparison with the health work that has been carried on in Vermont, and Massachusetts, and New York State, I do want to say—and include this in the record—that the most outstanding public health work that has been done in the United States has been done in the Southern states.

That is evidenced by the fact that our confreres in Europe who come to the United States to observe public health work and public health

administration, who are sent here under grants from the Rockefeller Foundation, of course, go to the centers of our education, that is, in Boston, at Harvard, but to get a true index as to public health administration they finally make a tour of the health work that is being done and has been done in the Southern portion of the United States.

That, I think, is an index as to the comparative value of progressive public health work.

It is recognized that public health work has progressed much farther in these states which have developed local health service than in those states which do not have or have not developed full-time local health service. (Applause)

CHAIRMAN MCGEACHY: Dr. Fox, do you have something to say in closing?

DR. FOX: No, thank you.

CHAIRMAN MCGEACHY: We will now hear the last paper on the afternoon's program, "Sanitation in Public Health Work," by Dr. Epperson, of Durham County.

. . . Dr. J. H. Epperson presented his prepared paper. . . (Applause)

SANITATION IN PUBLIC HEALTH WORK

By J. H. EPPERSON
Superintendent of Health, Durham, N. C.

The earliest history of public health programs in the Nation and the old world attaches considerable significance to the control of disease by certain sanitary procedure. It is true, however, that the policies governing such procedure have from time to time been modified and in many instances changed altogether. Long before the discovery of definite infection and the isolation of specific organisms of disease, sanitary science was practiced in certain particulars with beneficial results. With the discovery of the microscope and with the relationship of germ life definitely connected with certain specific diseases, public health procedure with respect to sanitary science has become a matter of closing the avenues of infection. As to how well we are doing the job today depends, of course, entirely upon the tools with which we have to work. Restricted budgets and incompetent personnel means little or no progress. Adequate appropriations and intelligently supervised programs are paying dividends in the form of lower morbidity rates and an increase in the personal hygiene factor of the community where practiced. Community sanitation in all of its aspects is just about as much in evidence today as ever, however, the service has been distinctly divided into two parts with the Health Department reserving to itself those services which have definite health significance and delegating the responsibility for the remaining service to some other subdivision of government. Such services as street cleaning, garbage and night

soil removal, plumbing inspection and sewer repair work are now performed by governmental agencies other than the Health Department while sanitation projects having to do with privy maintenance and repair, swimming pools, inspection of food handling establishments, dairy inspection, meat inspection, installation of home sewage disposal plants and other numerous projects are still definite responsibilities of the Health Department.

The question has often been asked as to what proportion of a budget should be applied to sanitary inspection service in the health program in relation to the amount of money spent for other phases of work. So far as I am aware, there is no fixed rule which would apply in this case. This is a matter for the local health officer to judge for himself, for in some communities sanitary inspection service may be limited beyond that which may be required in others. I do say, however, that my observation has been over a period of years that where a health program has prospered and been accepted by the people, that sanitation has been stressed and sometimes urged beyond the things which really have health significance. This, it would appear, is a good piece of strategy in obtaining appropriations for other phases of the health program which really have a more definite value. Unfortunately many persons still attempt to judge the effectiveness of the Health Department as a whole, by how well the sanitary practices of the community have been regulated. I think it goes without saying that appropriations of funds for the average health unit is governed somewhat at least by the sanitary index of the community in which the unit functions. I would say further, that in the preparation of a budget I have found it highly desirable to classify service and to show the exact amount of funds allotted for each division of the program. Sanitation or probably I should say sanitary inspection has its definite place in the budget. A certain amount of money is allotted for salaries and transportation of inspectors. This plan enables the Health Officer to fix responsibility for service in proportion to expenditures and to evaluate the results accomplished from such expenditures separate and apart from other items appearing in the budget. It is comparatively easy for appropriating bodies to "trim budgets" as a whole and simply appropriate a lump sum and leave the distribution of same to the Health Officer or the Board of Health. Apparently it is not quite such an easy task when consideration is to be given by them of assuming responsibility for the curtailment of service and designating the service to receive the cut.

A responsibility which the Health Officer must assume in connection with the items of service performed by the sanitary inspection personnel, is that of formulating fairly definite policies regulating the inspector's activities. We are constantly being called upon to render service which has no health significance. If this type of service be rendered it is only a matter of time until major items of sanitary significance are overshadowed by having started "ill advised service." A service performed in a community whether advised or ill advised for a stated time is very hard indeed

to discontinue. In view of this fact it would appear highly desirable to let the community know without hesitation or any mental reservation whatsoever, that petty complaints having no health significance are not provided for in the annual budget, and that the Health Department has no jurisdiction in such matters. A great many people have formulated definite ideas apparently regarding the source of certain diseases. They have obtained this information from some unauthoritative source. Personally, I think it is high time when health department personnel should attempt to set the public mind right on such matters. One of the functions of the health department is health education, then why not do a bit of educating along the lines of sanitary procedure which has health significance. Of course, I mean to infer that the matter in question should be handled in a diplomatic manner. Many citizens make complaints to the health department through ignorance. They assume that the city or county government of which the health department is a part has unlimited jurisdiction and ample funds to remedy any unusual situation which may arise and that as citizens and taxpayers they are justly entitled to such service. Such persons should be enlightened to the end that they understand where the police power of the sanitary personnel ends and where their rights as citizens in the civil courts begin.

The term "sanitation" as related to the work of the health department covers a very broad field indeed. As to just how far the health officer may go usually depends upon his mental attitude towards such matters and the importance he attaches to work of this character as compared with the other items of health service in his program. I think at this point it might be well to point out a few inconsistencies in the procedure practiced in some communities. I think that I am safe in saying that we pay a bit too much attention to the premises surrounding the home and not enough attention to the gross insanitary practices which go on within the home. I have known of instances where the privy has been properly built, the live-stock removed to the required distance from the residence, the water supply investigated and properly protected and then on the interior of the home find some of the most vile insanitary practices imaginable. In another instance we set up very high standards for our drinking water supplies and justly so, and then permit swimming pools to operate which are grossly contaminated. And who can say that persons who frequent these pools do not drink or swallow much of this filth. We require the Greek restaurants and weiner stands to provide adequate facilities for hand-washing and provide individual towels and yet many of our schools are not provided with such facilities and as a result the children consume food purchased from the lunch room or brought from home without having washed their hands. We closely scrutinize every movement the dairyman makes in the production and handling of his products and even require him to deliver same at a temperature of fifty degrees or less and then at many homes the bottles remain on the door step until the cap has spewed out from the effects of a July sun and the neighborhood flies have injected their dose

of poison for the infant of two summers. We, of course, fully recognize that Rome was not built in a day nor has sanitary procedure in health departments been brought to its present status without much effort and considerable forethought, however, I think we should pause occasionally and take stock of a few of our inconsistent practices.

Rural sanitation is a subject which has been given considerable attention in certain parts of our great State and I think many of the county health officers are to be congratulated on the progress they have made. Considerable privy work has been accomplished, private water supplies have been improved, homes have been screened, septic tanks and sanitary plumbing appliances have been installed, malaria incidence has been materially reduced, school sanitation has progressed and many other notable achievements have been accomplished. Food inspection has made much progress in some communities while in others apparently little attention is being paid to this phase of inspection service. We, of course, are fully aware of the fact that many items of sanitary service vary in health value, but I think that we should recognize the indirect value of such service by way of improving environment, to the end that a health consciousness will be stimulated on the part of many who in the past have been slow to accept the idea of community health.

The State Board of Health through its Bureau of Sanitary Engineering and Inspection is and has been for years rendering a great service to the State in many particulars. The improvement in water supplies is one of its notable achievements. No one can in the least question the advisability of a safe water supply for any community. Quite frequently it occurs that the problems incidental to water purification processes and plant supervision are of such intricate nature as to require the services of highly trained personnel. Therefore, I think, the State Board of Health can fully justify its position in keeping a watchful eye on the water plants of the entire State and be in position at any time to render a highly technical service to any community in need of such service and to advise with local officials relative to policies of plant operation. Such service in my opinion is highly desirable and very necessary. This Bureau likewise renders service to local health departments by way of designing and assisting in the installation of sewage disposal plants and septic tanks for rural schools and residences in unsewered areas. I have found this service to be particularly helpful and a means of saving hundreds of dollars to the local taxpayers. All of the white rural schools in Durham County are equipped with properly designed sewage disposal plants built in accordance with plans and specifications furnished by the Bureau of Engineering. In Durham County there are approximately 800 suburban and rural homes using septic tanks. According to definite information which I have at hand, less than two per cent of these installations have given any trouble whatsoever. I am of the opinion that service of this character is well worth while in view of the fact that it enables the rural home owner to enjoy the privilege of home sanitation that the urban dweller enjoys. Through the coöperation

of State and local health officials our rural and suburban communities may be made more desirable in which to live and the science of personal hygiene promoted thereby. Milk sanitation, I fully realize, is a subject on which many men of intelligence and good judgment honestly differ. Therefore, it goes without saying that any organization, or individual or group of individuals who may suggest that certain tried and true rules of procedure be abandoned and in lieu thereof others adopted will enter an objection. Personally, I will grant that in the outset of the Standard Milk Ordinance my views on the subject were unfavorable. However, for the sake of uniformity in inspection procedure and grading of supplies and as a practical yardstick for measuring the effort of producers, I find the ordinance serves my purpose unusually well.

I feel that it goes without saying that dairy and food inspection is unanimously accepted as being a part and portion of every well designed local health program and that the main purpose of such service is to guarantee to the public that milk and other food products will be produced and handled in such a manner as to prevent the spread of disease by faulty or slovenly methods. One of the chief weapons in carrying on this service is the score or rating of each individual establishment at periodic intervals and the making of such ratings public. The general public is eager for such information and to a large extent purchase from those who choose to maintain satisfactory sanitary conditions at their respective places of business.

I do not believe it would be amiss to discuss briefly the type of rating which appears to secure the most satisfactory results and seems to satisfy the consuming public and at the same time causes the least confusion in the minds of the managers of the establishments rated. My experience has been that the numerical rating wherein definite values are assigned to each specific item with regard to equipment and maintenance of the establishment in question frequently gives rise to debate between inspector and proprietor and unless the inspector is well trained in the use of inspection judgment in assigning values, the management of the business may in all probability be left in a confused state of mind and with a feeling of ill will toward the health department. On the other hand I have found it entirely practical to use a system of grading wherein all of the important items of equipment and maintenance are indicated on the rating sheet, it being the business of the inspecting officer to mark only the items which are not acceptable. Equipment which measures up to the standard set by the local health agency either should or should not be acceptable. The same should apply to the maintenance of the premises with respect to sanitary practices. It may be said by way of example that a refrigerator or a floor is either clean or dirty making the usual allowance for operation. I cannot accept the principle set out in most numerical rating schemes that an establishment dispensing food to the public should be given credit for partially clean equipment.

I am further of the opinion that all establishments rated should be classified in groups and that not more than three groups be recognized as acceptable and then only when no unusual insanitary practice is detected during the grading period. The groups may be designated as A-B-C, it being understood and agreed between the health department and the parties concerned what policies shall prevail in determining the final quarterly grade of each place in question.

Much has been said recently as to the real health significance of requiring employees of food handling establishments to undergo a periodic health examination. In Durham and Durham County I will say that this service is and will be continued. I fully realize the weak spots and its miscarriages at times but I am still of the opinion that the idea should not as yet be abandoned if funds are available for supplying the necessary medical service.

Swimming pool sanitation is attracting more attention than formerly and justly so. Not only are the public pools being more adequately designed in every particular but very strong sentiment seems to prevail that adequate recirculating equipment be installed to insure at all times the sanitary character of the water. I do feel, however, that only trained operators should be allowed to supervise the purification processes and that adequate laboratory service should be available to properly regulate same. The fill and draw pool will probably be with us until legislated out of existence. It has been my experience that this type of pool can be maintained reasonably satisfactory if an adequate, safe supply of water is available for frequent periodic refillings. As a general rule it is very difficult to secure frequent fillings because of the expense involved.

Privy sanitation is a problem for every health unit within the State and cannot be overlooked. The State has been unusually fortunate in securing a tremendous sum of public funds with which to carry on this important service. I have had an opportunity to build several hundred privies both in the rural and urban areas of my county during the CWA-ERA and WPA programs, and I feel that the most satisfactory privy yet to be built is the concrete slab type designed by the Bureau of Engineering of the State Board of Health. This privy is economical to build and without question will be of longer life than the other types which have previously been erected.

In our excreta disposal programs I cannot say too much concerning the advantages of urging the installation of home sewage disposal plants in lieu of the privy. It is entirely possible for many of these plants to be installed in the rural home of today thus affording the housewife many of the sanitary conveniences which the family would enjoy if living within the city. Not only may neighborhood sanitation be improved by the elimination of possible health hazards through the installation of individual sanitary sewer service, but certainly and most assuredly are living conditions improved within the home itself because of such installations.

In practically all of the counties of the State the protection of private water supplies attract attention of the health department. I do not believe much comment is necessary on this subject other than to say that as much time as possible should be devoted to this problem because of the number of open wells and springs which exist that are grossly polluted. In all probability many of our typhoid cases originate from such sources of water supply.

Many other matters of sanitary significance could be discussed but time will not permit, therefore in conclusion permit me to say that so long as we find a place in our respective budgets for sanitary service let us attempt to administer this service with the same amount of intelligent forethought as we do in the case of medical inspection of school children, public health nursing, maternity and infancy programs, clinic service or what not. For after all a health department in its strictest sense is an institution designed to prevent disease, suffering, and untimely death, and each division of that department should be so well balanced that a harmonious blending of the entire unit is possible, to the end that the greatest good may be accomplished from the public funds entrusted to our care.

DISCUSSION

Chairman McGeachy: The discussion on this paper will be opened by Mr. Booker.

Mr. Warren H. Booker (Raleigh): Mr. Chairman, Ladies and Gentlemen: Up until now I have enjoyed this program immensely. I believe this has been the best meeting I have ever had the pleasure of attending in connection with the North Carolina Public Health Association. Especially have I enjoyed this last paper by Dr. Epperson.

When I considered the enormous scope of the subject Dr. Epperson had to discuss—that of "Sanitation in Public Health Work in North Carolina"—it seemed to me that it was bound to take a master mind or an intellectual giant to handle it in the limited time he had at his disposal.

It seems to me, however, that the program committee is to be given credit for having selected a man to present a paper of that kind who could handle it in such a masterly fashion in the limited time allotted to him.

In regard to the sanitary work, I think Dr. Epperson has done Herculean work in Durham County. He has been a veritable giant in sanitary accomplishments.

In regard to sanitation and its developments, it is my experience that many writers point out that this public health movement is one of constant change, development and improvement, and that is as it should be.

In the early stages of the public health movement, it was built around the filth idea, from which resulted our modern sanitation. Later came the epoch-making work of the great Pasteur, Koch and others, and we had

what might be called the "era of bacteriology." Sanitation and bacteriology were the main fields in public health work. But as time went on both were developed, modified and enlarged in many directions. Then as the study of tuberculosis and other diseases developed it was found that many other factors were involved in public health work besides sanitation, bacteriology and popular instruction in personal hygiene. We soon had groups working on infant mortality, dietary deficiency diseases, mental hygiene, industrial hygiene, and we will probably have others.

But in all or practically all of these later activities, modern sanitation still plays an important role and now we have in the recent Social Security measure concrete evidence of national recognition of this ever-changing, ever-expanding public health movement in a manner and to a degree never before dreamed of. And I am certain the work, even now, is just getting a good start.

While the public health movement has been expanding and changing in its concept and increasing in its points of frontal attack, so has sanitation.

A quarter of a century ago we had "Swat the Fly" campaigns. We wrote and lectured against the fly. We sought, and found, his breeding place. We tracked him across the Petri plate, and we were going to eradicate him.

And right here I wish to pause long enough to pay a word of tribute to some of the original work done in the matter of fly campaigns, right here in the Asheville Health Department, ladies and gentlemen.

Well do I remember in about 1911 or 1912, the Asheville Health Department had a fly campaign exhibit at an International Hygiene Congress held in Washington, D. C. They prepared little glass vials in which they had the eggs, the larvae, the pupae, and full-grown flies. These were mounted on cards in these little bottles, and passed around as souvenirs. Best of all, they had, with the coöperation of the District of Columbia Health Department, gathered up specimens of horse manure and had that in their exhibit actually breeding flies on the job, to show the health officers and we sanitarians the actual process of breeding flies from start to finish.

My hat is off to men like Dr. McCormack, Dr. Reynolds, Dr. Carl Reynolds, our State Health Officer, Dr. McBrayer and others who did that original work.

But who would have thought then that a group of automobile manufacturers up here in Detroit would eventually solve our problem of fly control? But they did.

However, don't think that the coming of the automobile has made the sanitarian's life a bed of roses. Right here in this county we have a strong movement to the rural areas which is doubtless due to a large extent to the coming of the automobile and good roads. There follows such a movement rural sanitation in all its multitudinous forms.

While it is one thing to purify or protect the water supply for a municipality like Asheville, it is quite another thing to look after hundreds and thousands of small private water supplies and hundreds and thousands of residential sewage disposal plants in the country.

Even now the very isolation of Asheville's originally pure mountain water supply is about to be destroyed by this very automobile that gave us fly control. Here we have the coming of a great parkway right across the top edge of Asheville's water supply.

So that while the coming of the automobile may have helped us solve one problem it brought, and is bringing, in its wake many, many other problems.

In the old days fencing and patrolling the Asheville watershed was deemed sufficient. Later as more and more people through the coming of the automobile were enabled to scout the mountains, particularly in the summer, it was found necessary to chlorinate and ammoniate the Asheville water supply. Now with the coming of a great parkway and tens of thousands of automobile tourists traversing our watersheds it looks more and more as though filtration would be the ultimate answer to Asheville's water supply problem.

But sanitation marches on. If it isn't one thing, it is two others.

Back in the days of "swat the fly" campaigns, it was considered a highly dangerous adventure to recommend pit privies. The Public Health Service was afraid of them. They recommended water-tight, concrete vaults, and carried on extensive experiments at Wilmington to show the great danger of polluting the ground far and wide with pit privies. But pit privies won out. They are here with us. Now we have pit privies until I am fed up on them. (Laughter) I am sick and tired of pit privies. Every night I pray for more and more rural electrification, because with the coming of rural electrification will come private water supplies, electrically operated. That gets rid of the open-topped well with its rope or chain and bucket. Running water in the home, of course, means water-carried sewage with modern residential sewage disposal plants, and, presto, the open-backed privy, the pit privy, and all other kinds of privies are gone!

We have a slogan in my office, "No more privies in North Carolina by 1950." (Laughter) Of course, we will not reach that goal. We didn't mean to when we set it. But we feel that we are shooting in the right direction, even though we are perhaps aiming a bit high.

To be sure, we are going to have pit privies with us for a long time to come, but while we do have them let's have the best kind we know how to build.

There again, ladies and gentlemen, Dr. Epperson is setting a wonderful example. He is building real privies in Durham County—not old-fashioned backhouses. He is building them all, or practically all, with separate concrete base and riser, placing them on concrete foundations, and giving

them two coats of paint. That makes all the difference between a sanitary privy and an old backhouse. It makes for a greater degree of permanency and it gives the householder a degree of respect for public health and sanitation that he never had before. And so sanitation and public health march on, ever changing, ever improving, ever expanding. In our humble efforts to advance and improve sanitation, we try to follow that old precept,

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside."

(Applause)

CHAIRMAN MCGEACHY: Is there any further discussion of this paper? If not, do you wish to say anything in closing, Dr. Epperson?

DR. EPPERSON: I have nothing further to say, Mr. President. Thank you.

. . . Announcements. . .

CHAIRMAN MCGEACHY: Is there anything else?

We will have reports of committees tonight.

. . . The meeting thereupon adjourned at four-fifteen o'clock. . .

ALPHABETICAL LIST OF FELLOWS FOR 1936 WITH POST OFFICE ADDRESSES

Name	*Address*
*Abel, J. F., (Hon.)	Waynesville
Abernathy, H. N., (Hon.)	Charlotte
Abernethy, Claude O.	Raleigh
Adams, Edw. E.	Murphy
*Adams, J. L.	Asheville
Adams, J. R.	Charlotte
Adams, N. B.	Murphy
Ader, O. L.	Walkertown
*Alexander, G. T.,	Thomasville
Alexander, Jas. R., (Hon.)	Charlotte
*Allan, William	Charlotte
Allen, A. L.	State Hosp., Goldsboro
Allen, Chas. I.	Wadesboro
Allen, G. C.	Lumberton
Allen, Jos. A., (Hon.)	New London
*Allen, M. H.	Cramerton
Allen, Sylvia	Charlotte
Alyea, Edwin P.	Durham
*Ambler, Arthur C.	Asheville
*Anders, McT. G., (Hon.)	Gastonia
Anderson, Chas. A., (Hon.)	Burlington
*Anderson, R. S.,	Rocky Mount
Anderson, W. B.	Durham
Anderson, Wade H., (Hon.)	Wilson
Andrews, John M.	Lexington
Andrew, Lacey A., Jr.	Durham
*Angel, Edgar	Franklin
Angel, Furman	Franklin
*Archer, Isaac J.	Black Mountain
Armistead, D. B.	Greenville
*Ashburn, C. W.	Statesville
*Ashby, E. C.	Mount Airy
Ashby, J. W.	Raleigh
*Ashe, J. R.	Charlotte
Ashcraft, J. E., (Hon.)	Fayetteville
Ashford, Chas. Hall	New Bern
*Ashworth, B. L., (Hon.)	Marion
*Ashworth, W. C., (Hon.)	Greensboro
Averitt, H. O.	Cedar Creek
Aycock, F. M.	Princeton
Aydlett, H. T.	Greensboro
Aydlette, Joseph P. (Hon.)	Earl
*Bacon, Harold Lyle	Bryson City
Baier, Geo. F., Jr.	W. Asheville
Baker, Horace M.	Lumberton
Baker, W. E.	Arden
Bandy, W. G.	Lincolnton
Banner, A. C.	Greensboro
Banner, Chas. W., OALR, (Hon.)—	—Greensboro
*Bardin, R. M.	Rutherfordton
Barefoot, Graham B.	Wilmington
Barker, C. S.	New Bern
Barnes, Dempsey	Asheboro
Barnes, J. T.	Asheboro
Barret, J. M.	Greenville
Barrier, H. W.	Black Mountain
*Barron, A. A.	Charlotte
*Basnight, Thos. G., (Hon.)	Stokes
Bass, H. H., (Hon.)	Henderson
Bass, H. H., Jr.	Henderson
Bass, Spencer P.	Tarboro
*Battle, John T. J., (Hon.)	Greensboro
Battle, N. P.	Rocky Mount
*Baxter, O. D.	Charlotte
*Beall, L. G.	Black Mountain
Beam, H. M.	Roxboro
Beam, R. S., OALR	Lumberton
Beasley, E. B.	Fountain
Beavers, J. W.	Kernersville
Beckwith, R. P.	Roanoke Rapids
Beers, David L.	Asheville
*Bell, A. E., (Hon.)	Mooresville
Bell, Carl W.	Raleigh
Bell, F. O.	Burlington
Bell, J. C.	Maysville
*Bell, G. E.	Wilson
Bellamy, Robert H., (Hon.)	Wilmington
*Belton, J. F.	Winston-Salem
Bennett, E. C.	Elizabethtown
Bennett, Jos. H.	Wadesboro
Benson, N. O.	Lumberton
Benton, Geo. R.	Fremont
Benton, Wayne J.	Bunn
Bernard, Holman	Pilot Mt.
Berry, John	Greensboro
Berryhill, W. R.	Chapel Hill
Best, D. E.	Goldsboro
Best, Henry B.	Wilson
Biggs, Montgomery H.	Rutherfordton

* Present at 1936 Meeting at Asheville.

Name	*Address*
Bigler, V. L.	Albemarle
Bitting, Numa Duncan	Durham
*Bittinger, S. M.	Sanatorium
*Bizzell, M. E., OALR	Goldsboro
*Black, George Wm.	Charlotte
*Black, O. R.	Landis
Blackshear, T. J., OALR	Wilson
*Blackwelder, Verne H.	Lenoir
*Blair, Andrew	Charlotte
*Blair, J. L.	Gastonia
Blair, M. P.	Marshville
Blanchard, T. W.	Hobbsville
*Bliss, F. E.	Fletcher
*Boice, E. S.	Rocky Mount
*Bolt, C. A.	Marshville
Boney, Elwood R.	Kinston
Bonner, J. B.	Aurora
*Bonner, K.P.B., (Hon.)	Morehead City
Booker, L. S.	Durham
Booker, Edwin N.	Selma
Boone, W. H., (Hon.)	Durham
Boone, W. W.	Durham
*Boseman, C. A.	Pinebluff
*Bost, T. C.	Charlotte
*Bostic, W. C., Jr.	Forest City
Bowers, M. A.	Winston-Salem
Bowles, Francis N.	Durham
Bowling, Edwin Holt	Durham
*Bowman, E. L.	Lumberton
Bowman, H. P., (Hon.)	Greensboro
Brady, Wade H.	Burlington
Bradford, G. E.	Winston-Salem
*Bradford, W. Z.	Charlotte
Bradshaw T. G.	Wilson
Bradsher, J. S.	Stovall
Brandon, W. O.	Concord
Brantley, Hassell, OALR	Spring Hope
Brantley, J. C.	Spring Hope
Bray, T. L.	Plymouth
*Brenizer, A. G.	Charlotte
*Brewer, J. S.	Roseboro
*Brewton, W. A.	Enka
*Bridges, D. T.	Lattimore
*Briggs, Henry H., Jr., OPH	Asheville
Brinkley, H. M.	Durham
Brinn, T. P.	Hertford
Bristow, C. O.	Rockingham
*Britt, C. S.	Charlotte
Britt, J. N.	Lumberton
Britt, T. C.	Mt. Airy
*Brockmann, Harry L.	High Point
Brooks, B. U.	Durham
Brooks, E. Bruce	Winston-Salem
Brooks, F. P.	Greenville
Brooks, R. E.	Burlington
*Brookshire, H. G.	Asheville
*Broun, M. S., OALR	Asheville
Brown, C. E.	Salisbury
Brown, F. B.	Winston-Salem
Brown, G. A., (Hon.)	Mt. Ulla
Brown, G. W., (Hon.)	Raeford
Brown, J. P., (Hon.)	Fairmont
*Brown, J. S., Sr., (Hon.)	Hendersonville
*Brown, J. S., Jr.	Hendersonville
*Brown, Kermit E.	Asheville
*Brown, Robt. Hyatt	Hendersonville
*Brown, W. M. B., OALR	Greenville
*Brownsberger, Ethel	Biltmore
*Brownsberger, John F.	Biltmore
*Brunson, E. P.	Albemarle
Buchanan, L. T.	Laurinburg
Buffaloe, J. S., (Hon.)	Garner
Bugg, C. R.	Raleigh
*Buie, Roderick M.	Greensboro
*Bulla, A. C.	Raleigh
*Bullitt, J. B.	Chapel Hill
Bullock, Thomas C., (Hon.)	Autryville
*Bulluck, Ernest S.	Wilmington
Bunch, Charles	Charlotte
Burleson, W. B.	Plumtree
*Burns, J. E.	Concord
Burrus, John T., (Hon.)	High Point
Burt, B. W., (Hon.)	Holly Springs
Burt, S. P., (Hon.)	Louisburg
*Busby, G. F.	Salisbury
*Butler, Leroy J.	Winston-Salem
Butt, R. B.	Marion
*Byerly, Andrew B., (Hon.)	Cooleemee
*Byrnes, T. H.	Durham
Caddell, G. C.	Hoffman
*Caldwell, D. G.	Concord
Caldwell, Lawrence	Newton
*Campbell, Alton C.	Raleigh
Campbell, A. S.	Durham
Campbell, Jas. I.	Norwood
*Carlton, Romulus L., (Hon.)—	—Winston-Salem
Carlyle, J. B.	Burlington
Carmichael, T. W.	Rowland
*Carpenter, Coy C.	Wake Forest
Carr, M. L.	LaGrange
*Carr, Ransom Lee	Rose Hill
*Carington, G. L.	Burlington
Carrington, S. M.	Oxford
Carroll, F. W.	Hookerton
*Carter, Bayard	Durham

* Present at 1936 Meeting at Asheville.

Name	*Address*
Carter, H. W., OALR	Washington
Carter, P. C.	Madison
Carter, Thos. L.	Gatesville
Carter, W. D.	Wilmington
Castelloe, Cola	Windsor
Casstevens, J. C.	Clemmons
Casteen, Kenan, OALR	Leaksville
Caviness, Zebulon N., (Hon.)	Raleigh
*Caviness, V. S.	Raleigh
*Cekada, Emil B.	Durham
Chadwick, W. S.	Beaufort
Chambers, P. J.	Charlotte
Chaplin, S. C.	Columbia
*Cheadle, C. M.	Burnsville
*Cheek, C. E.	Fuquay Springs
Cheesborough, Thos. P., (Hon.)	—Biltmore
Chester, P. J., OALR	Southern Pines
Cheves, W. G.	Bunn
*Choate, A. B.	Charlotte
*Clark, Badie T.	Wilson
*Clark, D. D.	Clarkton
Clark, E. S.	Clarkton
*Clark, H. S.	Asheville
Clay, E. L.	Timberlake
*Clayton, M. B.	Statesville
Clement, Edward B., OALR, (Hon.)	Salisbury
Cloninger, K. L.	Conover
Clyatt, Claude Eugene	Denton
*Cobb, Donnell B.	Goldsboro
Cobb, Wm. H., Jr., (Hon.)	Goldsboro
*Cocke, C. H.	Asheville
*Cocke, E. R.	Asheville
Cocke, Jere E.	Asheville
Coddington, H. A.	Wilmington
Cook, J. L.	Winston-Salem
Cook, W. E.	Mebane
*Cooke, G. C.	Winston-Salem
*Coleman, G. S.	Raleigh
*Colby, C. DeW.	Asheville
Cole, Walter F.	Greensboro
Coleman, L. A.	Salisbury
Collins, Ruth M.	Greensboro
*Combs, Fielding, ALR	Winston-Salem
*Combs, Jos. J.	Raleigh
Cooper, A. Derwin	Durham
*Cooper, G. M., (Hon.)	Raleigh
*Coppridge, W. M.	Durham
Corbett, J. P.	Swansboro
*Cornwell, A. M.	Lincolnton
*Corpening, O. J.	Granite Falls
*Cotten, Clyde E., (Hon.)	Asheville

Name	*Address*
*Couch, V. F., ALR	Winston-Salem
Covington, J. M.	Wadesboro
Covington, J. M. C.	Roanoke Rapids
Cox, E. L., (Hon.)	Jacksonville
*Cox, G. S.	Tabor
Cozart, B. F.	Reidsville
Cozart, S. R.	Greensboro
Cozart, W. S.	Fuquay Springs
*Craddock, A. B.	Asheville
*Craig, S. Douglas	Winston-Salem
Cranmer, J. B., (Hon.)	Wilmington
Cranz, Oscar W.	Kinston
*Craven, Erle, Jr.	Lexington
*Craven, Jean	Lexington
Craven, Thomas	Huntersville
*Crawford, Robt. H.	Rutherfordton
Crisp, S. M.	Greenville
*Crispell, R. S.	Durham
Cromartie, R. S.	Elizabethtown
Crouch, A. McR.	Wilmington
Crouch, T. D.	Stony Point
*Crow, S. L.	Asheville
*Crowell, A. J., (Hon.)	Charlotte
*Crowell, L. A., (Hon.)	Lincolnton
*Crowell, L. A., Jr.	Lincolnton
*Crump, Curtis	Asheville
*Crump, C. L.	Hickory
Crumpler, James F.	Wilmington
Crumpler, Paul	Clinton
Cummings, M. P.	Reidsville
Cutchin, J. Henry	Whitakers
Dale, G. C.	Goldsboro
Daligny, Charles, (Hon.)	Troy
*Dalton, B. B.	Rockingham
Dalton, Wm. N., (Hon.)	Winston-Salem
Daniels, O. C., OALR, (Hon.)	Oriental
Darden, D. B.	Stantonsburg
Daughtridge, A. L.	Rocky Mount
Davenport, C. A.	Hertford
Davenport, Eleanor	Kinston
Davidian, Varton A.	Smithfield
Davidson, Jno. E. S., (Hon.)	Charlotte
Davis, F. M.	Greenville
Davis, J. M.	Wadesboro
*Davis, Jas. W.	Statesville
*Davis, P. B., Sheraton Hotel,	High Point
Davis, Rachel D.	Kinston
*Davis, R. B.	Greensboro
Davis, Stephen W.	Charlotte
Davis, Thomas W., OALR, (Hon.)	Winston-Salem
Davis, T. M.	Charlotte
*Davison, Wilburt C.	Durham

* Present at 1936 Meeting at Asheville.

Name	*Address*
Dawson, J. N.	Bolton
Dawson, W. E.	Hookerton
Deans, A. W.	Battleboro
DeArmon, J. McC., (Hon.)	Charlotte
Dees, D. A., OALR	Bayboro
Dees, R. E.	Greensboro
*Dees, Rigdon O.	Greensboro
DeLaney, C. O.	Winston-Salem
*Denchfield, A. L.	Asheville
Dewar, William B.	Raleigh
*Deyton, John W.	Asheville
Dick, Julius V.	Gibsonville
Dickie, J. W.	Southern Pines
*Dickinson, E. T., (Hon.), ALR	Wilson
*Dickinson, K. L.	Raleigh
*Dickinson, M. S.	Oakboro
*Dixon, G. G.	Ayden
Dixon, Guy E., (Hon.)	Hendersonville
Dodge, Eva F.	Winston-Salem
Donnelly, Grant L.	Chapel Hill
Dosher, J. Arthur	Southport
Dosher, Wm. S.	Southport
Drewry, W. H.	Badin
*Drummond, C. S.	Winston-Salem
*Duckett, V. H.	Canton
Duffy, Charles	New Bern
Dula, F. M.	Lenoir
Duncan, Amos C.	Forest City
Duncan, S. A.	Benson
Dunlap, L. V.	Albemarle
*Durham, C. W.	Greensboro
Eagle, J. C.	Spencer
*Eagle, Watt W., ALR	Durham
Eason, J. A.	Williamston
Eaves, Rupert S.	Rutherfordton
*Eckel, O. F.	Asheville
Edgerton, G. S.	Hickory
Edwards, A. M.	Taylorsville
*Edwards, B. O.	Asheville
Edwards, C. J.	Raleigh
*Edwards, F. D.	Lawndale, Rt. 1
Edwards, V. E.	Greensboro
Eldridge, Chas. P.	Raleigh
*Elias, Lewis W.	Asheville
Eller, Albert J., (Hon.)	Wilkesboro
Ellington, A. J., OALR	Burlington
*Elliott, A. H.	Wilmington
*Elliott, J. A.	Charlotte
Elliott, J. C.	Oxford
*Elliott, W. F., OALR	Lincolnton
*Elliott, Wm.	Forest City
Ellis, R. C., (Hon.)	Shelby
*Ennett, N. T.	Greenville

* Present at 1936 Meeting at Asheville.

Name	*Address*
Epstein, H. G.	
Ervin, John W.	Morganton
Erwin, Evan A.	Laurinburg
Evans, J. E.	Wilmington
Evans, L. B., (Hon.)	Windsor
Evans, W. F.	
Everett, A. C.	Rockingham
*Faison, Elias	Charlotte
Faison, Yates W.	Charlotte
Fales, Robert	Wilmington
*Falls, Fred	Lawndale
*Farrington, R. K.	Thomasville
Farthing, L. E.	Wilmington
*Fassett, Burton W., OALR	Durham
Faulk, J. G.	Pembroke
*Fauntleroy, Jas. W.	Saluda
Fay, Oliver F.	Wilmington
Fearing, Isaiah, (Hon.)	Elizabeth City
Fearington, J. C. P.	Winston-Salem
Felton, R. L., Jr	Carthage
Felts, Robt. L.	Durham
Ferebee, C. G.	Morehead City
*Ferguson, R. T.	Charlotte
Ferneyhough, W. T.	Reidsville
Fetzer, P. W.	Madison
Fields, Leonard E.	Chapel Hill
Fike, Ralph L.	Wilson
Finch, O. E.	Raleigh
Fitzgerald, J. H., OALR	Smithfield
*Flagge, Phillip W.	High Point
Fleetwood, Jos. A.	Conway
Fleming, L. E.	Charlotte
*Fleming, M. I.	Rocky Mount
*Flemming, Giles M.	Cleveland
*Flippin, J. M., (Hon.)	Pilot Mountain
Flippin, Samuel T., (Hon.)	Siloam
Flowers, C. E.	Zebulon
Floyd, L. D.	Fair Bluff
Forbus, Wiley D.	Durham
*Ford, D. E.	Washington
Forrest, D. E.	Hillsboro
Fortune, Alex F., (Hon.)	Greensboro
*Foster, M. T.	Fayetteville
Fouts, J. H.	Franklin
*Fox, N. A.	Greensboro
Fox, P. G.	Raleigh
*Fox, Robt. Eugene	Raleigh
*Franklin, Ernest W., Jr	Charlotte
*Frazier, J. W.	Salisbury
Freeman, J. D., OALR	Wilmington
*Freeman, Wm. T.	Biltmore
Fresh, W. M.	Hickory
Frink, H. W.	Chapel Hill
Frizzelle, M. T.	Ayden

Name	Address
*Frye, Glenn R.	Hickory
Fulghum, Jas. E.	Louisburg
Futrell, L. M.	Murfreesboro
*Gage, L. G.	Charlotte
Gallant, Robt. M.	Charlotte
Galloway, W. C., (Hon.), OALR—	—Wilmington
*Gambrell, Grover C.	Lexington
*Gardner, C. E., Jr.	Durham
*Garren, R. H., (Hon.)	Monroe
*Garrison, D. A., (Hon.)	Gastonia
*Garrison, R. B.	Hamlet
Gariss, F. H.	Lewiston
Garvey, Fred K.	Winston-Salem
Garvey, R. R.	Winston-Salem
Gaskins, C. W.	Asheville
*Gaskins, J. S.	Albemarle
Gaskin, Lewis R.	Albemarle
Gaskin, Madge B.	Albemarle
*Gaul, Jno. Stuart	Charlotte
*Gentry, Geo. W.	Roxboro
*Gibbon, James W.	Charlotte
Gibbon, Robert L., (Hon.)	Charlotte
Gibbs, N. M.	New Bern
*Gibson, John S.	Gibson
Gibson, L. O.	Statesville
*Gibson, M. R., OALR	Raleigh
Gilbert, E. L.	Winston-Salem
Gill, Jos. A.	Elizabeth City
*Gillespie, S. C.	
Gilmore, C. M.	Greensboro
Gilmore, W. D.	Tombstone, Ariz. (Iredell-Alexander)
Gilbreath, Frank H., (Hon.)—	—North Wilkesboro
Glascock, H. G., Jr.	Raleigh
Glascock, Joy H., (Hon.)	Greensboro
Glenn, C. F.	Rutherfordton
*Glenn, Lucius N., (Hon.)	Gastonia
*Gold, Ben	Shelby
Gold, Charles F.	Rutherfordton
*Gold, T. B., ALR	Shelby
Goley, Willard Coe	Graham
*Goode, T. B.	Statesville
*Goodman, A. B., (Hon.)	Lenoir
*Goodwin, Edith A.	Morganton
*Goodwin, O. S.	Apex
Goudelock, Jno. J.	Monroe
Goudge, Mabel E.	West Durham
*Gouge, A. E.	Bakersville
Gove, Anna M., (Hon.)	Greensboro
Grady, F. M.	Mooresville
*Grady, Jas. C., (Hon.)	Kenly
*Grady, Wm. Earle, (Hon.)	Tryon
*Grantham, Wm. L.	Asheville
Gray, Eugene P.	Winston-Salem
Grayson, C. S.	High Point
*Greene, Jos. B., OALR	Asheville
Greene, P. Y.	Raleigh
Greene, W. A.	Whiteville
Greenwood, A. B.	Asheville
*Gregg, A. D.	Liberty
Griffin, H. L.	Asheboro
*Griffin, H. W.	Hickory
*Griffin, M. A.	Asheville
*Griffin, W. R.	Asheville
Griffith, F. W.	Asheville
*Griffith, L. M., OALR	Asheville
Griggs, W. T., (Hon.)	Poplar Branch
*Grimes, W. L.	Winston-Salem
*Groome, J. G.	High Point
*Groves, R. B.	Lowell
*Guyton, C. L.	Monroe
Gwyn, H. L.	Yanceyville
*Haar, F. B.	Greenville
Hackler, R. H.	Raleigh
Hackney, Ben H.	Lucama
Hagaman, J. B.	Boone
Halford, Jos. W., (Hon.)	Lillington
Hall, W. D.	Raleigh
Ham, Clem	Goldsboro
Hamblen, E. C.	Durham
Hambrick, Robt. T.	Hickory
*Hamer, Douglas, Jr.	Lenoir
Hamer, W. A.	Chadwick
Hamilton, John H.	Raleigh
Hammond, A. F.	Polloksville
*Hand, Edgar H.	Charlotte
Hanes, F. M.	Durham
Hansen-Pruss, O. C. E.	Durham
Harbison, J. W.	Shelby
Hardee, W. P., OALR	Durham
Harden, Graham	Burlington
Harden, R. N.	Greensboro
*Hardin, E. R.	Lumberton
*Hardin, R. H.	Banner Elk
Hardy, Ira M., OALR, (Hon.)	Kinston
Hare, R. B.	Wilmington
*Harper, F. T., Jr.	Jamestown
Harper, J. H.	Snow Hill
Harrell, L. J.	Goldsboro
Harrill, L. B., (Hon.)	Caroleen
*Harrington, Carey L.	Oteen
Harris, W. T.	Troy
Harrison, Edmund, (Hon.)	Greensboro
*Harrison, Edward T.	High Point

* Present at 1936 Meeting at Asheville.

Name	Address
*Harrison, H. H.	Asheville
Harriss, Andrew H., (Hon.)	Wilmington
Harry, J. M.	Fayetteville
Hart, Deryl	Durham
Hart, O. J.	Winston-Salem
*Hart, V. K.	Charlotte
Hathcock, Thos. A., (Hon.)	Norwood
Hatcher, M. A.	Hamlet
Hayes, A. H.	Fairmont
Hayes, R. B.	Hillsboro
Hays, B. K., (Hon.)	Oxford
*Haywood, C. L., Jr.	Elkin
Harvey, W. W.	Greensboro
Haywood, Hubert B., Jr.	Raleigh
Head, W. T.	Campobello, S. C., Rt. 4 (Rutherford Co.)
Hedgpeth, Cary	Lumberton
Hedgepeth, E. McG.	Chapel Hill
Hedgepeth, L. R.	Lumberton
*Hedrick, C. R.	Lenoir
*Hege, J. Roy	Winston-Salem
*Helms, J. B.	Morganton
Helsabeck, B. A.	King
Helsabeck, C. J.	Walnut Cove
Helsabeck, R. S.	King
Henderson, Irma C.	Asheville
Henry, T. B.	Rockingham
*Hensley, Chas. A.	Asheville
Herbert, Fred L.	Andrews
Herman, Chas. B.	Statesville
Herring, E. H.	Raleigh
Hester, Wm.	Reidsville
Hiatt, H. B.	Wilmington
Hicks, Calvin S., (Hon.)	Durham
Hicks, I. F., (Hon.)	Dunn
*Hicks, V. M., Oph.	Raleigh
Highsmith, Charles, (Hon.)	Dunn
Highsmith, J. D.	Fayetteville
*Highsmith, J. F., (Hon.)	Fayetteville
Highsmith, J. F., Jr.	Fayetteville
Highsmith, Seavy, (Hon.)	Fayetteville
Highsmith, W. C.	Fayetteville
Hightower, Felda	Wadesboro
Hill, J. N.	Murphy
*Hill, M. D.	Raleigh
*Hill, Wm. I., (Hon.)	Albemarle
*Hinson, Angus	Statesville
*Hipp, Edw. R.	Charlotte
*Hipps, A. G. T.	Asheville
Hocutt, Battle A.	Clayton
Hodgin, H. H.	Red Springs
Hoggard, J. T.	Wilmington
Holbrook, J. Samuel	Statesville
Holleman, Chas.	Winston-Salem
Holloway, Joseph C.	Durham
Holloway, Robert Lee, (Hon.)	—West Durham
Hollyday, W. M., OALR	Asheville
*Holmes, A. B.	Fairmont
*Holmes, George W.	Winston-Salem
*Holt, D. W.	Greensboro
Holt, Wm. P., (Hon.)	Erwin
Holt, Wm. P., Jr.	Erwin
Holt, T. J.	Warrenton
Hood, J. Sidney	Gastonia
Hooks, Borden	Tarboro
Hooper, Jos. W.	Wilmington
Hoover, C. H., (Hon.)	Crouse
Horton, M. C., OALR	Raleigh
Horton, R. A.	Mebane
Horton, W. C., (Hon.)	Raleigh
Houck, Albert F., (Hon.)	Lenoir
Houser, E. A. (Hon.)	Shelby
*Houser, Forest M.	Cherryville
Houser, O. J.	Charlotte
*Hovis, L. W., OALR, (Hon.)	Charlotte
*Howard, C. E.	Goldsboro
Howell, W. L.	Ellerbe
Hubbard, Chas. C., (Hon.)	Farmer
*Hubbard, Fred C.	North Wilkesboro
*Hudson, C. C.	Greensboro
Hunsucker, Chas. R.	Hickory
Hunt, J. F.	Spindale
Hunt, J. S.	Charlotte
Hunter, J. P.	Cary
Hunter, L. W., (Hon.)	Charlotte, Rt. 1
*Hunter, W. Myers	Charlotte
Hunter, W. C.	Wilson
Hurdle, S. W.	Winston-Salem
*Huston, Jno. W.	Asheville
Hutchens, E. M.	North Wilkesboro
Hutchinson, S. S.	Bladenboro
Hyde, Francis Edward	Beaufort
*Ingersoll, Louise M.	Asheville
Ingram, Chas. B., (Hon.)	Mt. Gilead
*Irwin, Henderson	Eureka
Ivey, H. B.	Goldsboro
*Ivey, R. R., U.S.P.H.S.	Biltmore
Jackson, Walter Leo	High Point
Jacocks, W. P.	Delhi, India (Lincoln Co.)
James, Albert W.	Laurinburg
James, Arthur A., Jr.	Sanford
James, F. P.	Laurinburg
*James, W. D.	Hamlet
Jarman, F. G.	Roanoke Rapids

* Present at 1936 Meeting at Asheville.

Name	*Address*
*Jennings, R. G.	Thomasville
Jervey, A. J	Tryon
Jett, Samuel G	Reidsville
Jewett, R. D., (Hon.), OALR—	Wilmington
John, Peter, (Hon.)	Laurinburg
Johnson, A. N	Garland
Johnson, C. T	Red Springs
*Johnson, Edward J	Cherokee
*Johnson, Floyd	Whiteville
Johnson, Geo. W	Wilmington
*Johnson, Harry L	Hickory
Johnson, Otis H., OALR	Morehead
Johnson, Jos. L	Graham
Johnson, J. R	Ramseur
Johnson, N. M., (Hon.)	Durham
Johnson, Paul. W	Winston-Salem
*Johnson, Thos. C., (Hon.)	Lumberton
Johnson, W. A	Reidsville
*Johnson, Walter R	Asheville
*Johnson, W. C	Canton
*Johnson, Wingate M	Winston-Salem
Johnston, J. G., OALR	Charlotte
Johnston, Christopher	Durham
*Johnston, W. W	Manteo
*Jonas, John F., (Hon.)	Marion
*Jones, Beverly N., OALR	Winston-Salem
Jones, Carey C	Apex
*Jones, Catesby	Asheville
Jones, D. C	Lansing
Jones, R. Duval	New Bern
Jones, R. R., Jr	Durham
Jones, R. Rives	Winston-Salem
Jones, T. Lester	Lansing
Jones, Thomas T	Durham
Jones, W. M	Gastonia
*Jones, Wm. M., (Hon.)	Greensboro
Jones, W. S	Nashville
Jordan, Wm. S., OALR	Fayetteville
Joyner, P. W	Enfield
Judd, Eugene C	Raleigh
Judd, Glenn B	Varina
Judd, James M., (Hon.)	Varina
Jurney, Peter C	Turnersburg
Justa, Samuel H	Macclessfield
Justice, Gaston B	Marion
Justice, L. H	Littleton
Keever, Jas. W	Hickory
*Keiger, Jas. A	Greensboro
Kieger, O. R	Winston-Salem
Keiter, W. E	Kinston
*Keith, Marion Y	Greensboro
Kelly, Wm. H	Durham
Kemp, Malcolm D	Pinebluff
*Kendall, B. H	Shelby
Kende, Tibor N	Northport, L. I. (Burke Co.)
Kenfield, H. W	Hatteras
*Kennedy, John P	Charlotte
*Kent, Alfred A., (Hon.)—Winter Park	—Florida, (Caldwell Co.)
Kent, Alfred A., Jr	Granite Falls
Kerns, T. C., OALR	Durham
Kerr, John D	Clinton
Kerr, Jas. E., (Hon.)	Winston-Salem
Kibler, W. H	Morganton
Killian, Frank M	Franklin
King, E. S	Wake Forest
King, Parks M., (Hon.)	Charlotte
King, Richard M	Concord
*King, Robt. Rogers	Ellenboro
Kinlaw, Wm. B	Rocky Mount
Kinsman, Henry F	Hamlet
Kirby, Guy S., (Hon.)	Marion
*Kirby, W. L	Winston-Salem
*Kirchberg, Roy Wm	Whittier
*Kirk, W. R., (Hon.)	Hendersonville
*Kirkpatrick, W. L	Waynesville
*Kitchin, Thurman D	Wake Forest
*Kluttz, DeWitt	Washington
*Knight, H. W	Bostic
*Knight, Wm. P., (Hon.)	Greensboro
Knowles, D. L	Rocky Mount
Knox, A. W., (Hon.)	Raleigh
*Knox, J. C	Raleigh
Knox, John, Jr	Lumberton
Koonce, Donald	Wilmington
Koonce, S. Everett, OALR, (Hon.)—	—Wilmington
Kornegay, Lemuel W., (Hon.)—	—Rocky Mount
*Kutscher, G. W., Jr	Asheville
Lackey, W. J	Fallston
*Lafferty, Robt. H	Charlotte
Lamm, I. W., (Hon.)	Raleigh
Lancaster, N. F	Waynesville
Lancaster, R. M	Rural Hall
Lancaster, Wm. Jessee	Wilmington
Lane, Bessie	Raleigh
Lane, John L., OALR	Rocky Mount
Lassiter, H. G	Weldon
*Lassiter, V. C	Winston-Salem
Laton, Jas. F., OALR	Albemarle
Landen, J. F	Chinquapin
Lattimore, E. B., (Hon.)	Shelby
*Lawrence, B. J	Raleigh

* Present at 1936 Meeting at Asheville.

Name	*Address*
*Leake, W. G.	East Bend
Le Bauer, S. F.	Greensboro
Ledbetter, Jas. M., OALR	Rockingham
Lee, J. Marshall	Newton Grove
Lee, Lawrence V., (Hon.)	Lattimore
*Lee, Mike	Kinston
*Lee, Thomas L.	Kinston
Leeper, Donald H.	Hiddenite
*Leiby, G. M.	Bryson City
*Leinbach, Robt. F.	Charlotte
*Lentz, C. M.	Albemarle
Lewis, C. W.	Beaufort
Lewis, H. W., (Hon.)	Jackson
Lewis, S. V.	Roxboro
Liles, L. C.	Raleigh
*Lilly, Jas. M., OALR, (Hon.)—	—Fayetteville
*Lindberg, O. S.	Candler
Linville, A. Y., (Hon.)	Winston-Salem
Linville, W. C.	Goldsboro
Lister, J. L.	Jackson
Little, Lonnie M.	Statesville
Liverman, J. S.	Winterville
*Livingston, E. A., OALR	Gibson
Logan, F. W. H.	Rutherfordton
*London, Arthur Hill	Durham
Long, Benj. Leroy	Glen Alpine
Long, E. F.	High Point
Long, Glenn	Newton
Long, H. F., (Hon.)	Statesville
Long, L. L.	Laurel Springs
*Long, R. H.	Morganton
Long, T. W.	Newton
Long, T. W. M.	Roanoke Rapids
*Long, V. McK.	Winston-Salem
Long, Wm. M.	Mocksville
Long, Z. F.	Rockingham
*Lord, Marjery J.	Montreat
*Lott, Wm. C.	Asheville
*Love, Bedford E., (Hon.)	Roxboro
Love, Wm. M.	Monroe
Lovelace, Thos. C.	Henrietta
Lovill, Robt. J.	Mount Airy
Lowery, E. F.	Raleigh
*Lowery, John R.	Salisbury
*Lubchenko, N. E.	Ansonville
*Lucas, Charles DeF.	Charlotte
Lupton, C. C.	Burlington
*Lyday, C. E.	Gastonia
*Lyday, R. O.	Greensboro
Lynch, J. M.	Asheville
Lyon, B. R.	Greensboro
Lyon, Henry Wise	Windsor
*MacConnell, John W., OALR	Davidson
*MacFayden, Paul R.	Concord
MacNider, Wm. deB.	Chapel Hill
*MacRae, J. D., Jr.	Asheville
*McAdams, C. R.	Belmont
*McAnnally, Jas. McG.	Reidsville
McAnally, Wm. J. (Hon.)	High Point
*McBee, Paul	Bakersville
*McBrayer, L. B., (Hon.)	Southern Pines
McBrayer, R.	New York (Hoke Co.)
*McBryde, Angus M.	Durham
McBryde, M. H.	Milton
*McCain, P. P.	Sanatorium
McCain, Wm. R., (Hon.)	High Point
*McCall, A. C., OALR	Asheville
*McCampbell, John, (Hon.)	Morganton
McCants, C. H.	Winston-Salem
McClees, E. C.	Elm City
McClelland, Joseph O.	Maxton
*McCoy, Thos. M.	Charlotte
McCotter, St. Elmo	Bayboro
*McCracken, C. M., (Hon.)	Fairview
*McCracken, J. R., (Hon.), OALR—	—Waynesville
*McCracken, M. H.	Canton
McCuiston, A. M.	Mt. Olive
*McCutchan, Frank, OALR	Salisbury
*McCutcheon, W. B.	Durham
McDade, B. B.	Burlington
McDowell, F. C.	Siler City
McDowell, Harold	Gastonia
*McDowell, R. H.	Belmont
McDowell, W. K.	Greenville
*McEachern, Duncan	Wilmington
McElroy, J. L.	Marshall
*McElwee, Ross S.	Statesville
*McGeachy, R. S., (Hon.)	Weldon
McGee, Jas. W., (Hon.)	Raleigh
McGee, Robert L.	Raleigh
McGehee, Jno. Wm., (Hon.)	Reidsville
McGehee, M. W.	Raleigh
*McGregor, Geo. D.	Charlotte
*McGoogan, Benj. J.	Morven
*McGuire, B. B.	Newland
*McIntosh, D. M.	Old Fort
McIntosh, D. M., Jr.	Marion
McIntyre, Stephen	Lumberton
McIver, Lynn, (Hon.)	Sanford
*McKay, Hamilton W.	Charlotte
*McKay, Jos. F., (Hon.)	Buies Creek
McKay, Robert W.	Charlotte
*McKay, W. P.	Fayetteville
*McKee, Lewis M.	Durham
*McKnight, R. B.	Charlotte

* Present at 1936 Meeting at Asheville.

Name	*Address*
*McLaughlin, C. S., (Hon.)	Charlotte
McLaughlin, J. E., (Hon.)	Statesville
McLean, E. K.	Charlotte
McLean, John W., (Hon.)	Godwin
McClelland, W. D.	Mooresville
McLeod, A. H., (Hon.)	Aberdeen
*McLeod, N. H.	Raleigh
McLeod, Vida C.	Southern Pines
McLeod, W. G.	Southern Pines
McLesky, J. H.	Charlotte
McMillan, J. M.	Candor
*McMillan, R. D.	Red Springs
*McNairy, Caroline	Lenoir
*McNeil, Jas. H.	North Wilkesboro
*McPhail, L. D.	Charlotte
McPherson, C. W., OALR	Burlington
McPherson, R. G.	Saxapahaw
McPherson, S. D., OALR, (Hon.)	—Durham
Mackie, Geo. C.	Wake Forest
Malloy, S. A., (Hon.)	Yanceyville
*Maness, A. K.	Greensboro
*Mangum, C. S.	Chapel Hill
Mann, I. Thurman	High Point
*Manning, I. H., (Hon.)	Chapel Hill
Mariner, N. B., (Hon.)	Belhaven
Markham, Blackwell	Durham
Marlowe, W. A.	Walstonburg
Marr, M. W.	Pinehurst
Marsh, Frank B.	Salisbury
*Marshall, J. F.	Winston-Salem
*Martin, J. A.	Lumberton
Martin, J. F.	Dunn
Martin, J. H.	Red Oaks
Martin, J. W.	Roanoke Rapids
Martin, Moir S.	Mt. Airy
*Martin, William F.	Charlotte
Martin, W. J.	Greensboro (Mecklenburg)
Mason, Manly	Newport
Massey, C. C.	Charlotte
Matheson, J. Gaddy	Ahoskie
Matheson, James P., (Hon.)	Charlotte
Matheson, R. A.	Raeford
Matros, Nathaniel H.	Oteen
Mathews, Vann M.	Charlotte
Matthews, B. B.	Shelby
*Matthews, James O., (Hon.)	—Clinton, R.F.D.
Matthews, M. L., (Hon.), OALR	—Sanford
Maxwell, C. S.	Beaufort
Mayer, W. B.	Charlotte

Name	*Address*
Meadows, W. J., (Hon.)	Greensboro
*Mears, George A.	Asheville
Mears, W. B.	Lexington
Mebane, W. C., (Hon.)	Wilmington
Mebane, W. C., Jr.,	Wilmington
Melvin, W. C., (Hon.)	Linden
Menzies, H. C., (Hon.)	Hickory
Merritt, John H.	Woodsdale, R. 1
*Mewborn, J. M.	Farmville
Miles, Walter W.	Champion
Milham, C. G.	Hamlet
Millander, Chas. W.	Asheville
Miller, J. F.	Marion
*Miller, Lila B.	Raleigh
*Miller, O. L.	Charlotte
*Miller, R. C.	Gastonia
Miller, Robert B., (Hon.)	Goldsboro
Miller, W. Edwin	Whiteville
Milliken, J. S.	Southern Pines
*Mitchell, Geo. W.	Wilson
Mitchell, G. T.	Wilkesboro
Mitchell, Z. P.	Henderson
Mitchener, J. S., OALR	Raleigh
*Mock, Frank L.	Lexington, R. 3
*Monk, Henry L., (Hon.)	Salisbury
Monroe, C. R.	Pinehurst
*Montgomery, J. C.	Charlotte
*Montgomery, Kenneth E.	Asheville
Moore, Alexander W.	Charlotte
Moore, Chas. E., (Hon.)	Wilson
Moore, D. B.	Badin
Moore, D. F.	Shelby
Moore, Henry B.	Graham
*Moore, Julian A.	Asheville
Moore, L. W.	Beaufort
*Moore, Oren	Charlotte
Moore, R. A.	Charlotte
*Moore, R. A.	Winston-Salem
*Moore, Roy H.	Canton
*Moore, W. Houston	Wilmington
*Morgan, B. E.	Asheville
*Morgan, G. A.	Asheville
*Morris, Jos. A., (Hon.)	Oxford
Morris, Rae H.	Concord
Morrison, James Rudy	Statesville
Mosely, Chas. W., (Hon.)	Greensboro
Mosely, Z. V.	Kinston
*Moss, G. O.	Cliffside
Motley, Fred Elliott	Charlotte
Mudgett, W. C.	Southern Pines
Mullen, M. P.	Wilson
*Munroe, H. Stokes	Charlotte

* Present at 1936 Meeting at Asheville.

Name	Address
*Munroe, J. P., (Hon.)	Charlotte
*Murchison, D. R.	Wilmington
*Murphy, Gibbons W.	Asheville
Murphy, W. B., (Hon.)	Snow Hill
Murray, R. L.	Raeford
*Myers, Alonzo	Charlotte
Myers, D. L.	Jennings
*Myers, John Q., (Hon.)	Charlotte
*Nalle, B. C., (Hon.)	Charlotte
*Nance, C. L.	Charlotte
*Nash, J. Fred	St. Paul
Neal, John W.	Monroe
Neal, Kemp P.	Raleigh
*Neal, Paul N.	Raleigh
*Neblet, H. C.	Charlotte
Neece, K. E.	Monroe
Nelson, R. J., (Hon.)	Robersonville
Nelson, W. H.	Clinton
Neville, C. H.	Scotland Neck
Newcombe, A. P., Jr.	Henderson
*Newell, H. A., OALR, (Hon.)—	—Henderson
*Newell, Leon B.	Charlotte
*Newland, Chas. L.	Brevard
Newman, Harold H.	Salisbury
*Newton, Howard L.	Charlotte
*Newton, Wm. K.	N. Wilkesboro
*Nichols, Alvin A.	Sylva
*Nichols, Ashbury S.	Sylva
*Nichols, Austin F.	Roxboro
*Nichols, R. E., Jr.	Durham
Nichols, Rhodes E., (Hon.)—	—Durham, Rt. 8
Nicholson, B. M.	Enfield
Nicholson, N. G., Jr.	Mt. Gilead
Nicholson, P. A., (Hon.)	Washington
Nisbet, D. Heath	Charlotte
*Nisbet, Walter O., (Hon.)	Charlotte
Noble, R. P.	Raleigh
*Nobles, Jos. E., (Hon.)	Greenville
Noblin, Roy L.	Oxford
Noell, R. H.	Rocky Mount
*Norburn, R. L.	Asheville
Norburn, C. S.	Asheville
Norfleet, A. C.	Tarboro
Norfleet, E. P.	Roxobel
Norman, J. S., OALR	Hickory
Norris, Henry	Waverly Mills, S. C. (Rutherford Co.)
*Northington, J. M.	Charlotte
Norton, Roy	Rocky Mount
Nowlin, Preston	Charlotte
Oates, George, (Hon.)	Grover
*Ogburn, H. H.	Greensboro
*Ogburn, L. C.	Hamptonville
Olive, P. W.	Fayetteville
Oliver, A. S.	Raleigh
Ormond, A. L.	Sanatorium
Ormand, J. W.	Monroe
*Orr, Chas. C., (Hon.)	Asheville
Orr, P. B., (Hon.)	Asheville
*Osborne, Gladys H.	Waynesville
*Osborne, Joe E.	Rosman
Outland, R. B.	Elm City
*Outlaw, J. K.	Albemarle
*Overcash, W. E.	Southern Pines
Owen, J. F.	Dix Hill, Raleigh
*Owen, M. L.	Canton
*Owen, Robert H.	Canton
*Ownbey, Arthur D.	Greensboro
*Pace, K. B.	Greenville
Paddison, J. R., (Hon.)	Kernersville
Padgett, Chas. K.	Shelby
Page, B. W.	Trenton
*Page, R. C.	Kinston
Palmer, Horace	Littleton
*Palmer, M. C.	Tryon
*Papineau, A.	Sanatorium
*Parker, Geo. F.	Asheville
Parker, H. R.	Greensboro
Parker, O. L., OALR	Clinton
Parker, S. F.	Shelby
Parker, W. T.	Fayetteville
Parks, Hugh	Elkin
Parrott, M. C.	Kinston
Parrott, Wm. T., (Hon.)	Kinston
Parsons, W. H.	Ellerbe
*Pate, F. J., OALR	Greensboro
Pate, Jas. G.	Gibson
*Pate, J. F.	Canton
Patterson, Jos. F., (Hon.)	New Bern
*Patterson, Reid	Charlotte
Pearson, H. O.	Pinetops
Pegg, F. G.	Winston-Salem
Peeler, Clarence N., OALR	Charlotte
Peeler, John H., (Hon.)	Salisbury
Peery, Vance P., OALR	Kinston
Peete, C. H.	Warrenton
*Pendleton, Wilson	Asheville
*Pepper, Jno. Kerr	Winston-Salem
Perkins, Jno. R., OALR	Winston-Salem
Perry, A. H.	Wood
Perry, D. R.	Durham
Perry, E. M.	Rocky Mount
Perry, G. G.	High Point
Perry, H. B.	Boone

* Present at 1936 Meeting at Asheville.

Name	*Address*
Perry, H. G.	Louisburg
Perry, Wm. Clifton	Louisburg
Person, Edgar C., OALR	Pikeville
Person, J. B., Jr. (Hon.)	Selma
Person, T. E.	Stantonsburg
Persons, Elbert Lapsley	Durham
Peters, W. A.	Elizabeth City
*Peterson, C. A.	Spruce Pine
*Petrie, Robt. Wm., (Hon.), OALR—	—Murphy
Petteway, George H.	Charlotte
Pfohl, Samuel F., (Hon.)	Winston-Salem
*Phillips, C. C.	Charlotte
*Phillips, C. H.	Thomasville
*Phillips, E. N.	North Wilkesboro
Pickett, John A., (Hon.)—	—Burlington, R.F.D., 1
Pitman, E. E.	Oak City
*Pittman, M. A.	Wilson
Pittman, R. L.	Fayetteville
Pittman, W. A.	Fayetteville
Plyler, M. T.	Sanatorium
Pool, B. B.	Winston-Salem
Poole, C. G.	Winston-Salem
Poole, C. T.	St. Pauls
Post, J. J.	Greensboro
Powell, Albert H.	Durham
Powers, Frank P., ALR	Raleigh
Prefontaine, E.	Greensboro
*Pressly, Geo. W., (Hon.)	Charlotte
Pressly, J. L.	Statesville
*Pressly, J. M.	Belmont
Price, H. L.	Taylorsville
*Pritchard, G. L.	Black Mountain
*Proctor, I. M.	Raleigh
Pugh, Chas. H.	Gastonia
Pulliam, B. E.	Winston-Salem
Purdy, J. J.	Oriental
Putney, R. H.	Elm City
Quickel, John C.	Gastonia
Quinn, David E.	Oteen
Raby, J. G.	Tarboro
*Rainey, W. T.	Fayetteville
Ramseur, W. L.	Kings Mountain
Ramsey, James G.	Washington
Rand, C. H.	Fremont
Rand, E. G.	Raleigh
Raney, R. B.	Durham
Rankin, Pressly R.	Mt. Gilead
*Rankin, S. W.	Winston-Salem
*Rankin, Watson S., (Hon.)	Charlotte
*Ranson, J. Lester	Charlotte
Ravenel, S. F.	Greensboro
Ray, F. L.	Charlotte
Ray, John B., (Hon.)	Leaksville
Ray, J. C.	Whitaker
Ray, O. L., (Hon.)	Raleigh, Rt. 1
Ray, S. P.	Leaksville
*Rea, G. L.	Charlotte
Readling, Hubert F.	Durham
Reaves, W. P., OALR	Greensboro
Redding, Alex H., (Hon.)	Cedar Falls
Redwine, J. Dan	Lexington
*Reeves, J. L.	Canton
Reeves, Robert J.	Durham
Reeves, R. J.	Leicester
*Register, F. M., (Hon.)	Kinston
Reid, Geo. P., (Hon.)	Forest City
Regnols, Earnest	Mayodan
Reitzel, C. E., (Hon.)	High Point
*Reynolds, C. V., (Hon.)	Raleigh
Rhodes, Jas. S.	Williamston
Rhodes, J. S.	Raleigh
Rhudy, Booker, E.	Greensboro
*Rhyne, Robt. E.	Gastonia
Rhyne, S. A.	Statesville
*Rich, J. C.	Candler
*Richardson, W. P.	Raleigh
Ricks, Leonard E., (Hon.)	Fairmont
*Riddle, J. B., (Hon.)	Morganton
Riggsbee, A. E.	Durham
*Ringer, Paul H.	Asheville
*Roberson, Foy	Durham
Roberts, Bryan N.	Hillsboro
Roberts, B. W.	Durham
*Roberts, Roy F.	Asheville
Roberts, W. M.	Gastonia
Robertson, E. M.	Durham
*Robertson, James F.	Wilmington
Robertson, J. M.	Charles
Robertson, J. N., OALR	Fayetteville
*Robertson, L. H.	Salisbury
*Robinson, C. W.	Charlotte
Robinson, D. E.	Burlington
Robinson, Robt. S.	Hazelwood
Rodman, J. C., (Hon.)	Washington
Rogers, Jas. Rufus, (Hon.)	Raleigh
Rogers, W. A., (Hon.)	Franklin
Rollins, Vance B.	Henderson
*Root, Aldert S.	Raleigh
Rose, A. H.	Smithfield
*Rose, A. S.	Chapel Hill
Rose, David J.	Goldsboro
*Ross, Geo. H., (Hon.)	East Durham
Ross, Otho B.	Charlotte
*Ross, Robert A.	Durham

* Present at 1936 Meeting at Asheville.

Name	*Address*
*Ross, Thos. W.	Charlotte
Rosser, R. G.	Vass
*Royal, Ben F.	Morehead City
Royal, D. M.	Salemburg
Royall, M. A., (Hon.), OALR	Elkin
Royster, Hubert A., (Hon.)	Raleigh
Royster, S. S., (Hon.)	Shelby
Royster, Thos. H.	Tarboro
*Royster, Thos. S.	Henderson
*Ruark, R. J.	Raleigh
Rucker, A. A.	Rutherfordton
Rudd, P. D.	Reidsville
*Rudisill, J. D.	Lenoir
Ruffin, D. W.	Ahoskie
Ruffin, J. M.	Durham
Russell, C. R.	Granite Falls
*Russell, Jesse M.	Canton
Russell, Lloyd P.	Fletchers
Russell, W. M.	Asheville
Sabiston, Frank, OALR	Kinston
Sadler, R. C.	Whiteville
Saliba, W. M., OALR	Wilson
*Sample, R. C.	Hendersonville
*Salley, E. McQueen	Hendersonville
Salmons, H. C.	Elkin
Sasser, T. J.	Charlotte
Saunders, Joseph H.	Williamston
Saunders, John R.	Lewiston
*Saunders, John T.	Asheville
Saunders, S. A.	Aulander
*Saunders, S. Stewart	High Point
Sawyer, Chas. J., (Hon.), OALR—	—Windsor
Sawyer, W. W., (Hon.), OALR—	—Elizabeth City
*Schaffle, Karl	Asheville
Schallert, P. O.	Winston-Salem
*Schenk, Sam M.	Shelby
*Shoenheit, E. W.	Asheville
Schoonover, R. A.	Greensboro
Shuler, J. E.	East Durham
*Scott, R. C.	Asheville
Scott, S. F.	Union Ridge
Scruggs, W. Marvin	Charlotte
*Seay, Hillis L.	Sanatorium
*Seay, T. W.	East Spencer
Selby, W. E.	Charlotte
Sessoms, E. T.	Roseboro
Sevier, J. T., (Hon.)	Asheville
Sewell, Marion H.	Jackson
Shafer, Irving E.	Salisbury
Shands, Alfred Rives, Jr.	Durham
Sharpe, C. R.	Lexington
Sharpe, Frank L., (Hon.)	Statesville
Shaver, W. T.	Albemarle
Shaw, J. A.	Fayetteville
*Shaw, L. R.	Statesville
Shelburne, P. A.	Greensboro
Sherrill, C. L.	Statesville
Chields, Henry B., (Hon.)	Carthage
Shirley, H. C., OALR	Charlotte
*Shore, T. W.	Boonville
*Shuford, Mary Frances	Asheville
*Shull, J. Rush	Charlotte
*Sidbury, J. B.	Wilmington
Sigman, F. G.	Spencer
*Sigmund, Wm. B.	Asheville
Sikes, G. L., (Hon.)	Salemburg
*Sikes, Ralph J.	Mt. Airy
Simmons, R. R.	Winston-Salem
Simons, C. E.	Wilson
Simpson, H. H.	Altamahaw
Singletary, G. C.	Clarkton
Sink, C. S.	N. Wilkesboro
Sink, V. Rex	Winston-Salem
Sisk, C. N.	Waynesville
Skeen, L. B.	Troy
Skinner, Louis C., (Hon.)	Greenville
Slate, John S., (Hon.)	Winston-Salem
Slate, M. L.	High Point
Slate, Wesley C.	Spencer
Sloan, A. B.	Mooresville
*Sloan, D. B., OALR	Wilmington
Sloan, H. L., Oph.	Charlotte
Sloan, Wm. H.	Garland
*Sloan, William S.	Wilson
*Sloop, Eustace H.	Crossnore
Small, Victor R.	Clinton
Smith, A. Jones	Black Creek
Smith, Alick T.	Greensboro
Smith, Annie T.	Durham
*Smith, B. R.	Asheville
*Smith, C. T.	Rocky Mount
*Smith, D. L.	Saluda
Smith, D. T.	Durham
*Smith, D. W.	Waynesville
*Smith, F. C., OALR	Charlotte
Smith, F. G.	Wilson
Smith, F. L.	Burlington
Smith, G. M.	Monroe
Smith, Harold Benj.	North Wilkesboro
Smith, J. A.	Lexington
Smith, John McNeill	Rowland
Smith, Jos. E.	Windsor
Smith, Joseph	Greenville
Smith, O. F.	Scotland Neck

* Present at 1936 Meeting at Asheville.

Name	*Address*
Smith, R. C.	Morehead City
Smith, Sidney	Raleigh
Smith, Slade A.	Whiteville
Smith, W. F.	Chadbourn
*Smith, William Gordon	Thomasville
Smith, W. G.	Wendell
*Smith, Wm. H.	Goldsboro
Smithwick, Jas. E., (Hon.)	Jamesville
Smoot, J. E., (Hon.)	Concord
Soady, J. H.	Asheboro
Sorrell, F. Y.	Wadesboro
Spainhour, Ellis H., (Hon.)	Winston-Salem
*Sparrow, Thos. DeL.	Charlotte
Speas, D. C.	Winston-Salem
Speas, W. P., OALR	Winston-Salem
Speed, J. A.	Durham
Spencer, Frederick B.	Salisbury
Spencer, Wm. O., (Hon.)	Winston-Salem
Spicer, Richard W.	Winston-Salem
Spikes, N. O.	Durham
Spoon, S. C.	Burlington
*Sprinkle, C. N.	Weaverville
Sprunt, Douglas H.	Durham
*Sprunt, W. H., Jr.	Winston-Salem
*Squires, Claude B.	Charlotte
Staley, S. Walter	Rocky Mount
*Stanford, Lois Foote	Durham
*Stanford, W. R.	Durham
*Stanton, D. A., (Hon.)	High Point
Starling, W. P.	Clinton
Starr, H. F.	Greensboro
*Stevens, M. L., (Hon.)	Asheville
*Stimpson, R. T.	Raleigh
*Stoddard, James K.	Cashier
Stokes, Jas. E., (Hon.)	Salisbury
Stone, G. E.	King
Stone, Wm. M.	Dobson
*Street, C. A.	Winston-Salem
Street, M. E., (Hon.)	Glendon
Stretcher, R. H.	Waynesville
Strickland, Arthur T.	Wilson
Strickland, E. F., (Hon.)	Winston-Salem
Strickland, E. L.	Wilson
*Stringfield, Samuel L.	Waynesville
*Stringfield, Thos., (Hon.)	Waynesville
Stutz, Greer M.	Southern Pines
*Strosnider, Chas. F.	Goldsboro
Strowd, W. A.	Durham
Suiter, W. G.	Weldon
Sullivan, Victor	Wilmington
Summerlin, Harry	Laurinburg
Sumner, E. A.	High Point
*Sumner, G. H.	Asheboro
*Sumner, Howard L.	Asheville
Sutton, Wm. G.	Seven Springs
*Swann, C. C.	Asheville
Swann, Jos. F., (Hon.)	Gastonia
*Sweaney, H. M.	Durham
*Sykes, R. P.	Asheboro
*Symington, John	Carthage
Tally, B. T.	Albemarle
*Tally, J. S.	Troutman
*Tankersley, J. W.	Greensboro
Tate, C. S.	Ramseur
*Tate, W. C.	Banners Elk
Tatum, Roy C.	Statesville
Tatum, Walter Lowe	Salisbury
*Tayloe, John Cotten	Washington
Tayloe, Joshua II	Washington
Taylor, Chas. W.	Kings Park, N. Y.
Taylor, E. H. E.	Morganton
*Taylor, F. R.	High Point
*Taylor, G. W.	Mooresville
Taylor, H. C.	Charlotte (Chadwick Station)
Taylor, Frank V.	Charlotte
Taylor, James T.	Greensboro
Taylor, R. W.	Oxford
Taylor, S. R., OALR	Greensboro
Taylor, Wm. L., (Hon.)	Oxford
Templeton, J. Y.	Mooresville
*Tennent, G. S., (Hon.), OALR	Asheville
*Terry, J. R.	Lexington
Terry, Wm. Calvin	Hamlet
Thigpen, H. G.	Scotland Neck
Tillotson, S. F.	Pilot Mountain
*Thomas, C. D.	Sanatorium
Thomas, J. G.	Greensboro
Thomas, W. N.	Oxford
Thompson, A. F., (Hon.), OALR	Troy
Thompson, C. A.	Sparta
Thompson, C. D., (Hon.)	High Point
*Thompson, H. C.	Shelby
Thompson, Hugh A.	Raleigh
Thompson, Joseph W.	Creedmoor
*Thompson, S. R.	Charlotte
Thompson, S. W., Jr.	Morehead City
Thurston, Asa	Taylorsville
Timberlake, C. V.	Youngsville
Todd, L. C.	Charlotte
Townsend, M. L.	Washington, D. C. (Mecklenburg Co.)
Townsend, R. G.	St. Pauls
Triplett, W. R.	Purlear
Trivette, W. A.	Houstonville

* Present at 1936 Meeting at Asheville.

Name	*Address*
*Trotter, Fred O.	Hendersonville
Troxler, R. M.	Burlington
*Tucker, Earl Van	Grifton
*Tucker, Jno. H., OALR, (Hon.)—	—Charlotte
Tugman, B. W.	West Jefferson
Turner, H. G.	Raleigh
Turrentine, Kilby P.	Kinston
*Tuttle, Rueben G.	Winston-Salem
Tydeman, F. W. L.	San Francisco, Cal. (Mecklenburg Co.)
Tyler, E. R.	Durham
Tyndall, R. G.	Kinston
*Tyner, Carl V.	Leaksville
Tyson, T. D.	Mebane
Upchurch, T. G.	Smithfield
Valk, A. deT.	Winston-Salem
Vann, H. M.	Wake Forest
Verdery, W. C.	Fayetteville
Verner, Carl Hugh	Forest City
*Vernon, Jas. W.	Morganton
Vestal, Willis J., (Hon.)	Lexington
Walker, H. D., (Hon.)	Elizabeth City
Walker, J. B.	Burlington
Walker, L. K.	Ahoskie
Walker, Robert J., Jr.	Tarboro
*Wall, R. L.	Winston-Salem
Wall, W. S.	Rocky Mount
*Walters, Chas. M.	Burlington
*Walton, C. L.	Glen Alpine
Walton, G. B.	Chadbourn
Wannamaker, Edw. J., Jr.	Charlotte
Ward, I. A., OALR	Elizabeth City
Ward, Jesse E.	Robersonville
*Ward, John LaB.	Asheville
Ward, W. C.	Pineville
Ward, W. T.	Raleigh
Warren, R. F.	Prospect Hill
Warrick, L. A.	Goldsboro
*Washburn, J. M.	Lake Lure
*Watkins, F. B.	Morganton
Watkins, G. T.	Durham
Watkins, W. M.	Durham
Watson, John B.	Raleigh
*Watson, Thos. M.	Greenville
Weathers, Bahnson,	Roanoke Rapids
Weathers, R. R.	Knightdale
Weaver, Henry B., (Hon.)	Asheville
*Weaver, W. J., (Hon.)	Rt. 4, Asheville
Webb, B. G., (Hon.)	Andrews
*Weddington, J. L.	Hendersonville
*Weizenblatt, Sprinza	Asheville
Wellborn, William R.	Elkin
Wessell, John C., (Hon.)	Wilmington
West, B. C.	Kinston
West, C. F.	Kinston
West, Louis N., OALR	Raleigh
West, Robert M., (Hon.)	Salisbury
*Westmoreland, J. R.	Canton
*Whaley, James D.	Hickory
Wheeler, J. H.	Henderson
Whelpley, Frank L.	Goldsboro
Whichard, M. P.	Edenton
Whicker, Max E.	China Grove
*Whisnant, Albert M., (Hon.), OALR—	—Charlotte
*Whitaker, J. Allen	Rocky Mount
*Whitaker, Paul F.	Kinston
White, F. W. M.	Halifax
*White, R. A.	Asheville
White, Thos. P.	Charlotte
White, W. H. C.	Elizabeth City
*Whitehead, S. L.	Asheville
Whitfield, B. W.	Murphy
Whitfield, Wm. Cobb, (Hon.)	Salisbury
*Whittington, Claude	Greensboro
*Whittington, Jas. B.	Winston-Salem
Whittington, W. W., (Hon.)	Snow Hill
Wilkerson, Charles B.	Raleigh
*Wilkes, Grover C.	Sylva
Wilkes, Marcus B.	Laurel Hill
Wilkins, J. C.	Haw River
Wilkins, J. W., OALR	Mt. Olive
Wilkins, R. B., OALR	Durham
Wilkins, S. A., (Hon.)	Dallas
Wilkinson, C. T.	Wake Forest
Wilkinson, R. W., Jr.	Wake Forest
Willcox, J. W., (Hon.)	West End
Williams, Albert F., (Hon.)	Wilson
Williams, Claude B.	Elizabeth City
*Williams, J. H.	Sanatorium
Williams, John D., (Hon.)—	—Guilford Station
William, J. D., Jr.	Stokesdale
*Williams, John W.	Asheville
Williams, L. P.	Edenton
Williams, Wm. N.	Tabor
*Willis, A. P., (Hon.)	Candler
Willis, B. C.	Rocky Mount
Willis, H. C., OALR	Wilson
Wilson, Albert R., (Hon.)	Greensboro
*Wilson, Frank E.	Mooresville
Wilson, N. G.	Madison
*Wilson, R. B.	Asheville
Wilson, W. G.	Smithfield
Winkler, Harry	Charlotte

* Present at 1936 Meeting at Asheville.

Name	*Address*
*Winstead, J. L.	Greenville
Winston, P. H.	Raleigh
*Wiseman, P. H.	Avondale
*Wishart, Wm. E.	Charlotte
Wolfe, H. C., OALR	Greensboro
Wolff, D. R.	Greensboro
Wood, Frank	Marion
Wood, J. W., (Hon.)	Boiling Springs
Wood, Martha	Marion
Woodard, A. G.	Goldsboro
Woodard, B. L.	Kenly
Woodard, C. A.	Wilson
Woodard, G. B., OALR	Wilson
*Woodcock, John H.	Hendersonville
Woodruff, Fred G.	High Point
Woodson, Charles W.	Salisbury
*Woodward, J. G.	Asheville
*Wooten, Floyd P.	Kinston
Wooten, W. I.	Greenville
*Worley, J. H.	Asheville
Wright, J. B., (Hon.), OALR	Raleigh
*Wyatt, A. T.	Lillington
Wyatt, Wortham	Winston-Salem
Wylie, W. deK.	Winston-Salem
Yarborough, Frank R.	Cary
Yarborough, R. F., (Hon.)	Louisburg
*Yoder, Paul A.	Winston-Salem
Yokely, Raymond V.	Thomasville
York, Alexander Arthur	High Point
Young, G. McD.	Postell
*Young, J. C.	Asheville
*Yow, I. A.	Concord
*Zealy, A. H., Jr.	Goldsboro
Zimmerman, Robert U.	Welcome

* Present at 1936 Meeting at Asheville.

ROSTER OF FELLOWS FOR 1936

BY COUNTIES

NOTE:—Every physician in the state whose name we could secure has had an opportunity to supply correct information as to his name, postoffice, academic and medical education, date of State license and date State Society was joined. A few did not take advantage of the opportunity. Anyone finding an error should report it to the Secretary of the society.

ALAMANCE-CASWELL COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
President: S. C. Spoon, Burlington; Univ. of Md., 1918; U.N.C.	1918	1920
Secretary: A. J. Ellington, Burlington; Columbia Univ., 1915	1915	1917
Anderson, Chas. A., Burlington, (Hon.); Coll. P. and S., Balt., 1901	1893	1896
Bell, F. O., Burlington; Atlanta Med. Coll., 1918	1921	1928
Braddy, Wade Hampton, Burlington; Univ. of N. C., 1909	1909	1913
Brooks, R. E., Burlington; Jeff. Med. Coll., 1920; U.N.C.	1920	1922
Carlyle, J. B., Burlington; Jeff. Med. Coll., 1926; U.N.C.	1926	1928
Carrington, G. L., Burlington; Johns Hopkins, 1920; U.N.C.	1920	1925
Cook, W. E., Mebane	.....	1934
Goley, Willard Coe, Graham; Univ. of Pa., 1924; U.N.C.	1924	1924
Gwyn, H. L., Yanceyville; Med. Coll. Va., 1923	1923	1925
Harden, Graham, Burlington; Univ. of Pa., 1919	1920	1922
Horton, R. A., Mebane	.....	1936
Johnson, Jos. L., Graham; Jeff. Med. Coll., 1926	1926	1930
Lupton, C. C., Burlington; Temple, 1931; U.N.C.	1931	1934
McDade, B. B., Burlington; Univ. of Md., 1918; U.N.C.	1918	1920
McPherson, C. W., Burlington; Univ. of Md., 1910; U.N.C.	1910	1912
McPherson, R. G., Saxapahaw; Univ. of N. C., 1908	1908	1909
Malloy, S. A., Yanceyville, (Hon.); Ky. School Med., 1897	1898	1903
Moore, Henry Blanchard, Graham; Jeff. Med. Coll., 1920	1920	1923
Pickett, J. A., Burlington, R.F.D., 1, (Hon.); Univ. of Tenn., Coll. of Med., 1894	1894	1904
Robinson, D. E., Burlington; Harvard Med. Coll., 1927	1929	1930
Scott, S. F., Union Ridge; Univ. of Pa., 1918; U.N.C.	1918	1920
Simpson, H. H., Altamahaw; Univ. of Md., 1925	1925	1926
Smith, F. L., Burlington; Univ. of Pittsburgh, 1927	1927	1928
Troxler, R. M., Burlington; Univ. of Md., 1914	1914	1915
Tyson, T. D., Mebane; Univ. Coll. of Med., Richmond, 1899	1899	1904
Walker, J. B., Burlington; Med. Coll. Va., 1914; U.N.C.	1914	1916
Walters, C. M., Burlington; Univ. of Md. and P. and S., Balt., 1908; U.N.C.	1908	1909
Warren, R. F., Prospect Hill; Atlanta School of Med., 1911	1911	1919
Wilkins, J. C., Haw River; Univ. of Md., 1911; U.N.C.	1911	1920

ALEXANDER—SEE IREDELL-ALEXANDER

ALLEGHANY—SEE WILKES-ALLEGHANY

ANSON COUNTY SOCIETY

President: J. M. Davis, Wadesboro; Columbia Univ., 1913	1913	1920
Secretary: F. Y. Sorrell, Wadesboro; Jeff. Med. Coll., 1930	1930	1933

Name and Address	Licensed	Joined State Society
Allen, Chas. I., Wadesboro; Columbia Univ. Coll. P. and S., 1913	1913	1922
Bennett, Jos. H., Wadesboro; Univ. of Md., 1894	1894	1904
Covington, J. M., Wadesboro; Med. Coll. of S. C., 1899; U.N.C.	1899	1899
Hightower, Felda, Wadesboro; Univ. of Pa., 1933	1933	1936
Lubchenko, N. E., Ansonville; N. C. Med. Coll., 1915	1915	1916
McGoogan, Benj. J., Morven; Univ. of Md., 1912; U.N.C.	1912	1923

ASHE—SEE WATAUGA-ASHE

AVERY COUNTY SOCIETY

President: R. H. Hardin, Banners Elk; N. C. Med. Coll., 1914	1914	1919
Secretary: B. B. McGuire, Newland; Jeff. Med. Coll., 1918; U.N.C.	1919	1928
Burleson, W. B., Plumtree; Univ. Md., 1915; U.N.C.	1915	1916
Sloop, Eustace H., Crossnore; N.C. Med. Coll., 1905; Jeff. Med. Coll., 1908	1905	1909
Tate, W. C., Banners Elk; Tenn. Med. Coll., 1908	1909	1912

BEAUFORT COUNTY SOCIETY

President: P. A. Nicholson, Washington, (Hon.); P. and S., Balt., 1889	1889	1890
Secretary: D. E. Ford, Washington; Univ. of Mich., 1908	1925	1924
Bonner, J. B., Aurora; Univ. of Md. School of Med. and Coll. P. and S., 1918; U.N.C.	1918	1920
Carter, H. W., Washington; Univ. of Va., 1895; U.N.C.	1895	1910
Kluttz, DeWitt, Washington; Univ. of Pa., 1918; U.N.C.	1919	1921
Mariner, N. B., Bellhaven, (Hon.); Univ. Coll. of Med., Va., 1903	1903	1903
Ramsey, Jas. G., Washingon; Univ. of Penna., 1922; U.N.C.	1924	1924
Rodman, J. C., Washington, (Hon.); Bellevue Med. Coll., 1892	1892	1895
Tayloe, John Cotten, Washington; Univ. of Pa., 1922; U.N.C.	1924	1925
Tayloe, Joshua, II, Washington; Univ. of Pa., 1923; U.N.C.	1923	1926

BERTIE COUNTY SOCIETY

President:	.....	.....
Secretary: S. A. Saunders, Aulander; Jeff. Med. Coll., 1914; U.N.C.	1914	1918
Castelloe, Cola, Windsor; Univ. of Pa., 1917; U.N.C.	1917	1926
Evans, L. B., Windsor, (Hon.); Univ. Coll. of Med., 1900; U.N.C.	1900	1904
Garriss, Frank H., Lewiston; Jeff. Med. Coll., 1912	1912	1918
Lyon, Henry Wise, Windsor; Univ. of Pa. Sch. of Med., 1918; U.N.C.	1919	1920
Norfleet, E. P., Roxobel; Va. Med. Coll., 1914	1914	1920
Saunders, John Rudolph, Lewiston; Emory Univ., 1926	1926	1931
Sawyer, Charles Judson, Windsor, (Hon.); P. and S., Balt., 1895	1895	1897
Smith, Jos. Elmer, Windsor; Med. Coll. of Va., 1921	1921	1922

BLADEN COUNTY SOCIETY

President: S. S. Hutchinson, Bladenboro; N. C. Med. Coll., 1911	1911	1917
Secretary: E. S. Clark, Clarkton; Med. Coll. of Va., 1914	1914	1915
Bennett, E. C., Elizabethtown; Med. Coll. of Va., 1926	1926	1927
Clark, D. D., Clarkton; Med. Coll. of Va., 1917	1917	1920
Cromartie, R. S., Elizabethtown; N. C. Med. Coll., 1900	1900	1915
Singletary, G. C., Clarkton; Univ. of Pa. School of Med., 1917; U.N.C.	1917	1918

BRUNSWICK COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....

Name and Address	Licensed	Joined State Society
Dosher, J. Arhur, Southport	.....	.....
Dosher, Wm. S., Southport	.....	1934

BUNCOMBE COUNTY SOCIETY

President: Geo. F. Parker, Asheville; Univ. of Pa., 1923; U.N.C.	1924	1926
Secretary: M. S. Broun, Asheville; Columbia University Coll. of P. S., 1919	1922	1923
Adams, J. L., Asheville; Jeff. Med. Coll., 1910	1910	1913
Ambler, Arthur C., Asheville; Jeff. Med Coll., 1920	1921	1922
Archer, Isaac J., Black Mountain; Northwestern Univ. Med. School, 1896	1905	1907
Baier, Geo. F., Jr., W. Asheville; Hahnemann Med. Coll., 1906	1920	1930
Baker, W. E., Arden; Chattanooga Med. Coll., 1908; U.N.C.	1915	1916
Barrier, H. W., Black Mountain; Chicago Medical School, 1921	1931	1936
Beall, L. G., Black Mountain; N. C. Med. Coll., 1906; Univ. of Pa., 1911	1906	1912
Beers, David L., Asheville; Univ. Mich., 1925	1928	1929
Brewton, W. A., Enka; Univ. of Pa., 1927	1927	1929
Briggs, Henry H., Jr., Asheville; Yale, 1931	1933	1934
Brookshire, Harley G., Asheville; N. C. Med. Col., 1905	1905	1907
Brownsberger, Ethel, Bitlmore; Coll. of Med. Evangelists, 1927	1933	1934
Brownsberger, John F., Biltmore; Coll. of Med. Evan., Los Angeles, 1925	1928	1929
Brown, Kermit E., Asheville; Jeff. Med. Coll., 1927	1927	1930
Cheesborough, Thomas P., Biltmore, (Hon.); Univ. of N. Y., 1891	1891	1900
Clark, Harold S., Asheville; Univ. of Pa., 1922, U.N.C.	1922	1924
Cocke, C. H., Asheville; Cornell Univ., 1905	1912	1913
Cocke, E. R., Asheville; Jeff. Med. Coll., 1913; U.N.C.	1914	1917
Cocke, Jere E., Asheville; Louisville Med. Coll., 1905	1905	1907
Colby, C. deW., Asheville; Univ. of Mich., 1892; Army Med. School, 1895	1909	1912
Cotten, Clyde E., Asheville, (Hon.); Univ. of Wooster, 1889	1901	1901
Crow, S. L., Asheville; Emory Univ., 1925	1926	1927
Crump, Curtis, Asheville; Harvard, 1926	1933	1934
Craddock, Alva B., Asheville; Johns Hopkins, 1918	1923	1924
Denchfield, A. L., Asheville; Univ. of N. Y., 1905	1914	1916
Deyton, John W., Asheville; Rush. Med. Coll., 1928	.....	1931
Eckel, O. F., Asheville; Med. Coll. of S. C., 1906	1907	1909
Edwards, B. O., Asheville; N. C. Medical Coll., 1905	1905	1909
Elias, Lewis W., Asheville; Columbus Univ. Coll. of P. and S., 1903	1906	1907
Freeman, Wm. T., Biltmore; Univ. of Ga., 1917	1927	1929
Gaskins, C. W., Asheville; Univ. of Tenn., 1932	1933	1934
Gillespie, S. C.	.....	1936
Grantham, Wm. L., Asheville; N. C. Med. Coll., 1906	1906	1911
Greene, Jos. B., Asheville; Univ. of Va., 1893	1910	1911
Greenwood, A. B., Asheville; Johns Hopkins, 1916; U.N.C.	1916	1918
Griffin, M. A., Asheville; Jeff. Med. Coll., 1917; U.N.C.	1917	1918
Griffin, W. R., Asheville; Jeff. Med. Coll., 1910	1910	1917
Griffith, F. W., Asheville; Johns Hopkins, 1906	1911	1912
Griffith, L. M., Asheville; Johns Hopkins, 1915	1916	1917
Harrington, Carey L., Oteen; Univ. of Pa., 1922	1924	1924
Harrison, H. H., Asheville; Jeff. Med. Coll., 1905; U.N.C.	1905	1918
Henderson, Irma C., Asheville; Tulane Univ., 1933	1934	1935
Hensley, Chas. A., Asheville; Jeff. Med. Coll., 1917	1917	1927

Name and Address	Licensed	Joined State Society
Hipps, A. G. T., Asheville; Jeff. Med. Coll., 1916	1916	1920
Hollyday, W. M., Asheville; Univ. of Maryland, 1908	1914	1915
Huston, Jno. Walter, Asheville; Rush Med. Coll., 1904	1912	1913
Ingersoll, Louise M., Asheville; Woman's Med. Coll., 1914	1925	1927
Ivey, R. R., U. S. P. H. S., Biltmore; Univ. of Ala., 1909	1921	1921
Johnson, Walter R., Asheville; Univ. Minnesota, 1924	1933	1934
Jones, Catesby, Asheville; Univ. of Md., 1893	1931	1932
Kutscher, G. W., Jr., Asheville; Univ. of Pittsburgh, 1923	1925	1926
Lindberg, O. S., Candler; Coll of Med., Evangelists, Los Angeles, Cal., 1923	1925	1928
Lord, Marjery J., Montreat; Univ. of Mich., 1916	1918	1918
Lott, Wm. C., Asheville; Univ. of Colo., 1929	1930	1931
Lynch, J. M., Asheville; Univ. of Md., 1904; U.N.C.	1912	1913
MacRae, J. D., Jr., Asheville; Univ. of Pa. Med. School, 1927; U.N.C.	1927	1930
McCall, A. C., Asheville; Univ. of Md., 1910	1910	1912
McCracken, C. M., Fairview, (Hon.); N. C. Med. Coll., 1896	1896	1904
Matros, Nathaniel H., Oteen; Marquette Univ., 1930	1933	1934
Mears, George A., Asheville; Med. Coll. Syracuse Univ., 1924	1924	1927
Millander, Chas. W., Asheville; Tulane Univ., 1919	1921	1924
Montgomery, Kenneth E., Asheville; Univ. Louisville, 1917	1920	1920
Moore, Julian A., Asheville; Univ. of Pa., 1918; U.N.C.	1918	1921
Morgan, B. E., Asheville; Univ. of Tenn., 1917	1921	1921
Morgan, G. A., Asheville; Univ. of Tenn., 1917	1920	1925
Murphy, Gibbons W., Asheville; Emory Univ., 1923	1923	1927
Norburn, Chas. S., Asheville; Univ. of Va., 1917; U.N.C.	1921	1924
Norburn, R. L., Asheville; Vanderbilt Univ., 1925	1925	1927
Orr, Chas. C., Asheville, (Hon.); Univ. of Md., 1904; U.N.C.	1904	1905
Orr, P. B., Asheville, (Hon.); Jeff. Med. Coll., 1901; U.N.C.	1901	1904
Pendleton, Wilson, Asheville; Univ. of Va., 1908	1919	1920
Pritchard, G. L., Black Mountain; Univ. Coll. of Med., Richmond, 1913	1913	1926
Quinn, David E., Oteen; Geo. Wash. Univ., 1930	1933	1934
Reeves, R. J., Leicester; Vanderbilt Univ., 1913	1913	1922
Reynolds, C. V., Raleigh, (Hon.); Univ. of N. Y., 1895	1895	1896
Rich, J. C., Candler; Univ. of Nashville, 1908	1908	1931
Ringer, Paul H., Asheville; Columbia Univ. P. and S., N. Y., 1904	1906	1907
Roberts, Roy F., Asheville; Tulane Univ., 1933	1933	1935
Russell, W. M., Asheville; Univ. of Cincinnati, 1928	1931	1932
Saunders, John T., Asheville; Columbia Univ., 1926	1934	1935
Schaffle, Karl, Asheville; Univ. of Pa., 1907	1926	1927
Schoenheit, E. W., Asheville; Jeff. Med. Coll., 1920	1920	1921
Scott, R. C., Asheville; Jeff. Med. Coll., 1902	1916	1919
Sevier, J. T., Asheville, (Hon.); Jeff. Med. Coll., 1895	1895	1899
Shuford, Mary Frances, Asheville; Rush Med. Coll., 1934	1934	1935
Sigmund, Wm. B., Asheville; Univ. Louisville, 1933	1934	1935
Smith, B. R., Asheville; Jeff. Med. Coll., 1911	1913	1914
Sprinkle, C. N., Weaverville; Jeff. Med. Coll., 1910; U.N.C.	1910	1922
Stevens, M. L., Asheville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Sumner, Howard L., Asheville; Jeff. Med. Coll.; U.N.C.	1926	1929
Swann, C. C., Asheville; Tulane Univ., 1926	1930	1931
Tennentt, G. S., Asheville, (Hon.); N. C. Med. Coll., 1894	1894	1898
Ward, John LaB., Asheville; Med. Coll. of S. C., 1905	1921	1922
Weaver, H. B., Asheville, (Hon.); Washington Univ., 1872	1881	1882
Weaver, W. J., (Hon.); Asheville; Jeff. Med. Coll., 1898; U.N.C.	1897	1903

Name and Address	Licensed	Joined State Society
Weizenblatt, Sprinza, Asheville; Vienniese Univ. of Med., 1922	1929	1931
White, R. A., Asheville; Univ. Cin. Coll. of Med., 1918	1920	1921
Whitehead, S. L., Asheville; Jefferson Med. Coll., 1921	1921	1929
Williams, John W., Asheville; Univ. of Md., 1906	1906	1906
Willis, A. P., Candler, (Hon.); Univ. of N. C., 1907	1904	1906
Wilson, R. B., Asheville; Univ. of Louisville, 1931	1931	1933
Woodward, J. G., Asheville; Univ. of Pa., 1925; U.N.C.	1925	1927
Worley, J. H., Asheville; Univ. of Tenn., 1931	1934	1935
Young, J. C., Asheville; Univ. of Tenn., 1926	1926	1929

BURKE COUNTY SOCIETY

President: Jas. W. Vernon, Morganton; Jeff. Med. Coll., 1909	1909	1913
Secretary: Edith A. Goodwin, Morganton; Women's Coll., Penna., 1932	1934	1934
Ervin, John W., Morganton; U.N.C., Wake Forest and Coll. Va., 1933	1935	1936
Helms, J. B., Morganton; Univ. of Pa., 1928	1928	1931
Kende, T. Norbert, Northport, L. I., N. Y.; Royal Hungarian Univ., Budapest, Hungary, 1922	1927	1928
Kibler, W. H., Morganton; Univ. of Pa., 1914	1914	1918
Long, Benj. L., Glen Alpine; N. C. Med. Coll. 1913	1913	1914
Long, Benj. L., Glen Alpine; N. C. Med. Coll., 1913	1913	1914
Long, R. H, Morganton; Jeff. Med. Coll., 1916	1916	1923
McCampbell, John, Morganton, (Hon.); Balt. Med. Coll., 1894	1895	1899
Riddle, J. B., Morganton, (Hon.); Vanderbilt Univ., 1898	1904	1904
Taylor, E. H. E., Morganton; Tulane Univ., La., 1924	1924	1925
Walton, C. L., Glen Alpine; Med. Coll. Va., 1931	1931	1933
Watkins, F. B., Morganton; Jeff. Med. Coll., 1907	1907	1910

CABARRUS COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Brandon, W. O., Concord; Med. Coll. Va., 1928	1929	1932
Burns, J. E., Concord; Med. Coll. of Va., 1923	1923	1927
Caldwell, D. G., Concord; Univ. of Pa., 1923; U.N.C.	1925	1925
King, Richard M., Concord, (Hon.); Jeff. Med. Coll., 1903	1903	1906
MacFayden, Paul R., Concord, (Hon.); Univ. Coll. of Med., Richmond, 1901; U.N.C.	1901	1904
Morris, Rae Concord	.....	1932
Smoot, J. E., Concord, (Hon.); Balt. Med. Coll., 1893	1894	1902
Yow, I. A., Concord; N. C. Med. Coll., 1906	1906	1910

CALDWELL COUNTY SOCIETY

President: C. R. Russell, Granite Falls; Univ. Coll. of Med., Richmond, 1909; U.N.C.	1909	1918
Secretary: Douglas Hamer, Jr., Lenoir; Med. Coll. of S. C.; U.N.C.	1927	1929
Blackwelder, Verne H., Lenoir; U.N.C.	.....	1931
Corpening, O. J., Granite Falls; Univ. Coll. of Med. Va., 1906	1906	1907
Dula, Frederick M., Lenoir; Vanderbilt	1934	1934
Goodman, A. B., Lenoir, (Hon.); N. C. Med., 1898	1897	1904
Hedrick, Clyde R., Lenoir; Georgetown Med. Sch., 1925; U.N.C.	1925	1926
Houck, Albert, Lenoir, (Hon.); P. and S., Balt., 1884	1891	1893
Kent, Alfred A., Winter Pk., Fla., (Hon.); Jeff. Med. Coll. 1885	1885	1894
Kent, Alfred A., Jr., Granite Falls; Univ. of Pa.; U.N.C.	1934	1934

Name and Address	Licensed	Joined State Society
McNairy, Caroline, Lenoir; Woman's Med. Coll. Pa., 1917	1917	1919
Rudisill, J. D., Lenoir; Univ. of Md., 1922	1922	1923

CAMDEN—SEE PASQUOTANK-CAMDEN-CURRITUCK-DARE

CARTERET COUNTY SOCIETY

President:	.....	.....
Secretary: L. W. Moore, Beaufort	.....	1933
Bonner, K. P. B., Morehead City (Hon.); Med. Coll. of Va., 1905	1905	1905
Chadwick, W. S., Beaufort; Univ. of Va., 1928	1928	1930
Ferebee, C. G, Morehead City; Med. Coll. of Va., 1902	1904	1904
Hyde, Francis Edward, Beaufort; West. Res. Univ., 1920	1925	1926
Johnson, Otis H. Morehead City; Atlanta Med., 1905	1926	1926
Lewis, C. W., Beaufort; Med. Coll. of Va. 1930	1930	1931
Mason, Manly, Newport; Tulane University; 1924; U.N.C.	1924	1925
Maxwell, C. S., Beaufort; Univ. of the South, Sewanee, 1900	1899	1904
Royal, Ben F., Morehead City; Jeff. Med. Coll., 1909; U.N.C.	1909	1909
Smith, R. C., Morehead City; Jeff. Med. Coll., 1923	1923	1926
Thompson, S. W., Jr., Morehead City; Med. Coll. Va., 1913; U.N.C.	1915	1922

CASWELL—SEE ALAMANCE-CASWELL

CATAWBA COUNTY SOCIETY

President:	.....	.....
Secretary: Robt. T. Hambrick, Hickory; Univ. of Tulane, 1923; U.N.C.	1923	1924
Caldwell, Lawrence, Newton; Univ. of Penna., 1932	1932	1934
Cloninger, K. L., Conover; Univ. of Md., 1931; U.N.C.	1931	1932
Crump, C. L. Hickory; Baylor Univ., Dallas, Tex., 1930	1935	1936
Edgerton, G. S., Hickory; U.N.C. Med., 1930; Temple Univ., 1932	1932	1934
Fresh, W. M., Hickory	.....	1919
Frye, Glenn R., Hickory; Jeff. Med. Coll., 1921; U.N.C.	1921	1923
Griffin, H. W., Hickory; Emory Univ., 1923	1931	1932
Hunsucker, Chas. R., Hickory; N. C. Med. Coll., 1913	1913	1915
Johnson, Harry L., Hickory; Univ. of Cin., 1924; U.N.C.	1924	1927
Keever, James W. Hickory	.....	1930
Long, Glenn, Newton; N. C. Med. Coll., 1912	1912	1915
Long, T. W., Newton; Emory Univ., 1935	1935	1936
Menzies, H. C., Hickory, (Hon.); N. C. Med. Coll., 1894	1894	1899
Norman, J. S., Hickory; P. and S., Balt., 1909	1911	1920
Whaley, James D., Hickory	.....	1936

CHATHAM COUNTY SOCIETY

CHEROKEE COUNTY SOCIETY

President: N. B. Adams, Murphy; Tenn. Med. Coll., 1896; U.N.C.	1909	1909
Secretary: Edw. E. Adams, Murphy; Jeff. Med. Coll., 1923	1923	1924
Hill, J. N., Murphy; Univ. of Louisville, 1909	1909	1909
Petrie, Robt. Wm., Murphy, (Hon.); Univ. of Md., 1903	1903	1903
Herbert, Fred L., Andrews; Tenn. Med. Coll., 1904	1912	1912
Webb, B. G., Andrews, (Hon.); Louisville Med. Coll., 1885	1885	1885
Whitfield, B. W., Murphy; Tulane Univ., 1920	1920	1936
Young, G. McD., Postell; Lincoln Mem. Univ., 1916	1917	1918

CHOWAN-PERQUIMANS COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Brinn, T. P., Hertford; Univ. of Pa., 1923	1923	1927
Davenport, C. A., Hertford; Univ. of Md., 1924; U.N.C.	1924	1926
Whichard, M. P., Edenton; Univ. of Md., 1910; U.N.C.	1910	1918
Williams, L. P., Edenton; Bellevue Med. Coll., 1918	1919	1921

CLAY—SEE MACON-CLAY

CLEVELAND COUNTY SOCIETY

President: Sam M. Schenk, Shelby; Univ. of Pa., 1923	1923	1926
Secretary: B. H. Kendall, Shelby; Univ. of Md., 1929; U.N.C.	1929	1931
Aydlette, Jos. P., Earl, (Hon.); Ky. Univ., 1901	1903	1903
Bridges, D. T. Lattimore; Emory Univ., 1926	1926	1927
Ellis, R. C., Shelby, (Hon.); Balt. Univ. Med. School, 1886	1889*	1891
Falls, Fred, Lawndale; Tulane, 1930	1930	1933
Gold, Ben, Shelby; Univ. of Md., 1920; U.N.C.	1920	1922
Gold, T. B., Shelby; N. C. M. Coll., 1911	1911	1915
Harbison, J. W., Shelby; Johns Hopkins, 1919; U.N.C.	1919	1924
Houser, E. A., Shelby, (Hon.); Chattanooga Med. Coll., 1898; Balt. Univ., 1902	1902	1904
Lackey, W. J., Fallston; Va. Medical College, 1928	1928	1929
Lattimore, E. B., Shelby, (Hon.); Bellevue Med. Coll., 1897	1896	1904
Lee, Lawrence V., Lattimore, (Hon.); Emory Univ. School of Med., 1894	1897	1904
Matthews, B. B., Shelby; Med. Coll. of S. C.	1927	1929
Moore, D. F., Shelby; Jeff. Med. Coll., 1925	1925	1927
Oates, George, Grover; Univ. of Louisville, 1894, (Hon.)	1902	1904
Padgett, Chas. K., Shelby; Jeff. Med. Coll., 1930	1930	1934
Parker, S. F., Shelby; Med. Coll. of Va., 1929	1929	1931
Ramseur, W. L., Kings Mountain; Med. Coll. of S. C., 1926	1927	1929
Royster, S. S., Shelby, (Hon.); Tenn. Med. Coll., 1891	1896	1904
Thompson, H. C., Shelby; Tulane Univ., 1930; U.N.C.	1931	1932
Wood, J. W., Boiling Springs, (Hon.); Louisville Med. Coll., 1892	1901*	1900

COLUMBUS COUNTY SOCIETY

President: W. Edwin Miller, Whiteville; Emory Univ., 1929	1934	1935
Secretary: W. A. Greene, Whiteville; Northwestern Univ., Chicago, 1934	1935	1936
Cox, G. S., Tabor; N. C. Med. Coll., 1911	1911	1914
Dawson, J. N., Bolton; Med. Coll. of Va., 1932	1932	1934
Floyd, L. D., Fair Bluff; N. C. Med. Coll., 1911	1911	1912
Johnson, Floyd, Whiteville; Memphis Hosp. Med. Coll., 1903	1903	1904
Sadler, R. C., Whiteville; N. C. Med. Coll., 1912	1912	1915
Smith, W. F., Chadbourn; N. C. Med. Coll., 1904	1904	1905
Smith, Slade A., Whiteville; N. C. Med. Coll., 1907	1907	1921
Williams, William N., Tabor; Med. Coll. of Va., 1924	1924	1925

* Registered.

CRAVEN COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary: Charles Duffy, New Bern; Jeff. Med. Coll., 1930	.....	1935
Ashford, Chas. Hall, New Bern; Johns Hopkins, 1927, U.N.C.	.....	1931
Barker, Christopher S., New Bern; Jeff. Med. Coll., 1909	1909	1924
Gibbs, N. M., New Bern; Univ. of Md. and Coll. P. and S., Balt., 1896	1895	1897
Jones, R. Duval, New Bern; Univ. of Md., 1896; U.N.C.	1897	1897
Patterson, Joseph F., New Bern, (Hon.); Jeff. Med. Coll., 1906	1906	1906

CUMBERLAND COUNTY SOCIETY

President: W. A. Pittman, Fayetteville; Temple Univ., 1932	.....	1934
Secretary: M. T. Foster, Fayetteville; Emory Univ., 1927	1927	1930
Ashcraft, J. E., Fayetteville, (Hon.); Univ. of N. Y., 1887	1887	1890
Averitt, H. O., Cedar Creek; Emory Univ., 1929	1929	1931
Bullock, Thomas C., Autryville, (Hon.); P. and S., Balt., 1885	1885	1886
Harry, J. M., Fayetteville; Med. Coll. of Va., 1934	1934	1936
Highsmith, J. D., Fayetteville; Jeff. Med. Coll., 1918	1918	1920
Highsmith, J. F., Fayetteville, (Hon.); Jeff. Med. Coll., 1889	1889	1893
Highsmith, J. F., Jr., Fayetteville; Univ. of Pa., 1927	1927	1929
Highsmith, Seavy, Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1901	1901	1902
Highsmith, W. C., Fayetteville; Univ. of Cincinnati, 1931; U.N.C.	1930	1932
Jordan, Wm. S., Fayetteville; Univ. of N. C., 1906	1906	1907
Lilly, James M., Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1903; U.N.C.	1903	1904
McKay, W. P., Fayetteville; Tulane Univ., 1916; U.N.C.	1916	1921
Olive, P. W., Fayetteville; P. and S., Balt., 1907	1907	1909
Parker, W. T., Fayetteville; Med. Coll. of S. C., 1928	1931	1933
Pittman, R. L., Fayetteville; Jeff. Med. Coll., 1910; U.N.C.	1910	1912
Rainey, W. T., Fayetteville; Univ. Coll. of Med., Richmond, 1913	1913	1916
Robertson, J. N., Fayetteville; Med. Coll. of Va., 1923	1923	1924
Shaw, J. A., Fayetteville; Univ. Pa., 1923; U.N.C.	1923	1926
Verdery, W. C., Fayetteville; Univ. of Ga., 1915	1920	1921

CURRITUCK—See Pasquotank-Camden-Currituck-Dare

DARE—See Pasquotank-Camden-Currituck-Dare

DAVIDSON COUNTY SOCIETY

President: R. V. Yokeley, Thomasville; N. C. Med. Coll., 1911	1911	1912
Secretary: Jean Craven, Lexington; Johns Hopkins, 1930	1933	1935
Alexander, G. T., Thomasville; Emory Univ., 1922	1933	1934
Andrews, John M., Lexington; N. Y. Univ. and Bellevue Hosp. Med. Coll., 1932; U.N.C.	1932	1934
Clyatt, Claude Eugene, Denton; Univ. of Ga., 1911	1923	1924
Craven, Erle, Lexington; Johns Hopkins Med., 1929	1932	1935
Farrington, R. K., Thomasville; Univ. Cin., 1925; U.N.C.	1925	1927
Gambrell, Grover C., Lexington; Univ. of Ga., 1912	1923	1924
Jennings, R. G., Thomasville; N. C. Med. Coll., 1913	1913	1920
Meares, W. B., Lexington; Univ. Va., 1915	1934	1936
Mock, Frank Lowe, Lexington, Rt. 3; N. C. Med. Coll., 1908	1908	1911
Phillips, C. H., Thomasville; Balt. Univ. School of Med., 1892	1893	1911
Redwine, J. Dan, Lexington; Emory Univ., 1931	1931	1934

Name and Address	Licensed	Joined State Society
Sharpe, C. R., Lexington; Jeff. Med. Coll., 1914	1914	1917
Smith, J. A., Lexington; N. C. Med. Coll., 1915	1915	1917
Smith, William Gordon, Thomasville; Tulane Univ., 1927; U.N.C.	1927	1928
Terry, J. R., Lexington; Univ. of Louisville, 1911	1912	1912
Vestal, Willis J., Lexington, (Hon.); P. and S., Balt., 1883	1889*	1893
Zimmerman, Robert U., Welcome; N. C. Med. Coll., 1901	1901	1904

DAVIE COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Byerly, A. B., Cooleemee, (Hon.); Univ. College of Med., Richmond, 1896; U.N.C.	1896	1904

DUPLIN COUNTY SOCIETY

President:	.....	.....
Secretary: Ransom Lee Carr, Rose Hill; Balt. Med. Coll., 1907	1908	1909
Landen, J. F., Chinquapin; Univ. Coll. of Med., Richmond, 1905	1905	1907

DURHAM-ORANGE MEDICAL SOCIETY

President: Francis N. Bowles, Durham; Med. Coll. of Va., 1924	1924	1926
Secretary: Annie T. Smith, Durham; Univ. of Ill., 1923; U.N.C.	1925	1926
Alyea, Edwin P., Durham; Johns Hopkins Med. Sch., 1923	1930	1930
Anderson, W. B., Durham, Johns Hopkins, 1924	1927	1927
Andrew, Lacey Allen, Jr., Durham; U.N.C. and Duke, 1932	1932	1936
Berryhill, Walter Reece, Chapel Hill; Harvard Med. Sch., 1927; U.N.C.	1928	1934
Bitting, Numa D., Durham; Jeff. Med. Coll., 1907; U.N.C.	1907	1909
Booker, Lyle S., Durham; Va. Univ. Med. Coll., 1908	1910	1911
Boone, W. H., Durham, (Hon.); N. C. Med. Coll., 1902	1902	1904
Boone, W. W., Durham; Jeff. Med. Coll., 1923; U.N.C.	1923	1925
Bowling, Edwin Holt, Durham; P. and S., Balt., 1891	1890	1908
Brinkley, H. M., Durham; Jeff. Med. Coll., 1919; U.N.C.	1919	1923
Bullitt, J. B., Chapel Hill; Univ. of Va., 1897	1914	1915
Byrnes, Thomas H., Durham; Med. Coll. of S. C., 1926	1932	1932
Campbell, A. S., Durham; Chicago Coll. Med. and Surg., 1917	1923	1924
Carter, Bayard, Durham; Johns Hopkins, 1925	1925	1931
Cekada, Emil Bogonir, Durham; Johns Hopkins, 1929	1934	1934
Cooper, A. Derwin, Durham; Geo. Washington Univ., 1931	1933	1934
Coppridge, W. M., Durham; Jeff. Med. Coll., 1918; U.N.C.	1919	1920
Crispell, R. S., Durham; Cornell Univ., 1920	1933	1934
Davison, Wilburt C., Durham; Johns Hopkins, 1917	1927	1927
Donnelly, Grant Lester, Chapel Hill; Duke Univ., 1933	1933	1935
Eagle, Watt W., Durham; Johns Hopkins, 1925	1929	1930
Fassett, Burton W., Durham; Balt. Med. Coll., 1898	1899	1909
Felts, Robert L., Durham; Univ. of Md., 1898	1899	1909
Fields, Leonard E., Chapel Hill; Univ. of Pa., 1929; U.N.C.	1929	1931
Forrest, D. E., Hillsboro; Univ. of Md., 1930; U.N.C.	1930	1933
Forbus, Wiley D., Durham; Johns Hopkins, 1923	1933	1935
Frink, H. W., Chapel Hill; Cornell Univ. Med. Coll., 1905	1926	1935
Gardner, Clarence E., Jr., Durham; Johns Hopkins, 1928	1932	1932
Goudge, Mabel E., West Durham; Ohio State Univ., 1922	1925	1927
Hamblen, E. C., Durham; Univ. of Va., 1928	1931	1931
Hanes, F. M., Durham; Johns Hopkins, 1908	1916	1917
Hansen-Pruss, O. C. E., Durham; Johns Hopkins, 1924	1930	1931

* Registered.

Name and Address	Licensed	Joined State Society
Hardee, W. P., Durham; Jeff. Med. Coll., 1912; U.N.C.	1912	1924
Hart, Deryl, Durham; Johns Hopkins, 1921	1929	1930
Hayes, R. B., Hillsboro; Univ. of Md., 1906	1910	1917
Hedgpeth, E. McG., Chapel Hill; Univ. of Penn., 1931	1931	1934
Hicks, Calvin S., Durham, (Hon.); Univ. of Md., 1904	1904	1904
Holloway, Joseph C., Durham; Tulane Univ., 1927; U.N.C.	1927	1929
Holloway, Robert Lee, W. Durham, (Hon.); Med. Coll. of Va., 1893	1893	1901
Johnson, N. M., Durham, (Hon.); Wash. Univ. Sch. of Med., 1877	1889	1879
Johnston, Christopher, Durham; Johns Hopkins, 1926	1930	1930
Jones, Robt. Randolph, Jr., Durham; Johns Hopkins, 1928	.....	1933
Jones, Thomas T., Durham; Johns Hopkins, 1932	1934	1935
Kelly, Wm. H., Durham; Univ. Ga., 1926	1935	1936
Kerns, T. C., Durham; Univ. of Pa., 1911; U.N.C.	1911	1912
London, A. H., Durham; Univ. of Pa., 1927; U.N.C.	1927	1930
MacNider, Wm. deB., Chapel Hill; Univ. of N. C., 1903	1903	1903
McBryde, Angus M., Durham; Univ. of Pa., 1928	1931	1932
McCutcheon, W. B., Durham; Med. Coll. of Va., 1921	1921	1924
McKee, Lewis Middleton, Durham; U.N.C. & Temple Univ., 1933	1934	1934
McPherson, S. D., Durham, (Hon.); Univ. of Md., 1903	1903	1904
Mangum, C. S., Chapel Hill; Jeff. Med. Coll., 1894	1896	1898
Manning, I. H., Chapel Hill, (Hon.); Long Island Coll. Hosp., N. Y., 1897; U.N.C.	1899	1901
Markham, Blackwell, Durham; Harvard Med. Coll., 1922; U.N.C.	1922	1925
Nichols, R. E., Jr., Durham; Univ. of Pa., 1930	1930	1932
Nichols, Rhodes E., Durham, (Hon.), Rt. 8; Va. Med. Coll., Richmond, 1890; U.N.C.	1890	1904
Perry, D. R., Durham; Jeff. Med. Coll., 1919	1919	1922
Persons, Elbert Lapsley, Durham; Harvard Med. Sch., 1927	1931	1931
Powell, Albert H., Durham; Univ. of Ga., 1924	1925	1925
Raney, R. B., Durham; Harvard, 1930	1934	1935
Readling, Hubert F., Durham; Wake Forest and Emory Univ., 1934	.....	1935
Reeves, Robert J., Durham; Baylor Univ., 1924	1930	1930
Riggsbee, A. E., Durham; Univ. of N. C., 1909	1909	1911
Roberson, Foy, Durham; Jeff. Med. Coll., 1909; U.N.C.	1909	1912
Roberts, Bryan N., Hillsboro; Univ. of Md., 1925; U.N.C.	1925	1926
Roberts, B. W., Durham; Univ. of Md., 1924; U.N.C.	1924	1927
Robertson, E. M., Durham; Tulane Univ., 1912; U.N.C.	1912	1913
Rose, A. S., Chapel Hill; Univ. of N. C., B.S., 1930; Harvard Med., 1932	1932	1935
Ross, George H., Durham, (Hon.); Univ. Tenn., 1899	1899	1904
Ross, Robert A., Durham; Univ. of Pa., 1922; U.N.C.	1922	1925
Ruffin, J. M., Durham; Univ. Va., 1926	1930	1931
Schular, J. E., East Durham; Med. Coll. of Va., 1914	1920	1922
Shands, Alfred Rives, Jr., Durham; Univ. of Va., 1922	1929	1930
Smith, D. T., Durham; Johns Hopkins, 1922	.....	1931
Speed, J. A., Durham; Jeff. Med. Coll., 1914	1914	1916
Spikes, N. O., Durham; Jeff. Med. Coll., 1924; U.N.C.	1924	1927
Sprunt, Douglas H., Durham; Yale Med. School, 1927	1934	1935
Stanford, Lois Foote, Durham; Univ. of Pa., 1921	1923	1924
Stanford, W. R., Durham; Univ. of Pa., 1919	1919	1923
Strowd, W. A., Durham; Univ. of N. C., 1909	1909	1926
Sweaney, H. M., Durham; Univ. of Pa., 1919	1919	1920
Tyler, E. R., Durham; Jeff. Med. Coll., 1923	1923	1927
Watkins, G. T., Durham; Jeff. Med. Coll., 1915	1915	1917

Name and Address	Licensed	Joined State Society
Watkins, W. M., Durham; Jeff. Med. Coll., 1923	1923	1925
Wilkins, R. B., Durham; N. C. Med. Coll., 1913	1913	1915

EDGECOMBE-NASH COUNTIES SOCIETY

President: J. Henry Cutchin, Whitakers; Univ. Coll. of Med., Rich., 1911; U.N.C.	1911	1915
Secretary: A. L. Daughtridge, Rocky Mount; Univ. of Md., 1924; U.N.C.	1924	1924
Anderson, R. S., Rocky Mount; Univ. of Md., 1924; U.N.C.	1924	1932
Bass, Spencer P., Tarboro; Univ. of Va., 1906	1907	1909
Battle, N. P., Rocky Mount; Univ. of Pa., 1926; U.N.C.	1930	1931
Boice, E. S., Rocky Mount; Univ. of Pa., 1909	1914	1915
Brantley, Hassell, Spring Hope; Jeff. Med. Coll., 1888	1888	1901
Brantley, J. C., Spring Hope; Jeff. Med. Coll., 1916	1916	1922
Deans, A. W., Battleboro; Med. Coll. of Va., 1915	1915	1917
Fleming, M. I., Rocky Mount; Jeff. Med. Coll., 1904; U.N.C.	1906	1919
Hooks, W. B., Tarboro; Richmond, 1930	1930	1932
Jones, W. S., Nashville; 1927	1927	1927
Justa, Samuel H., Macclesfield; Med. Coll. of Va., 1933	1934	1934
Kinlaw, Wm. Bernard, Rocky Mount; Univ. of Pa., 1920	1920	1923
Knowles, D. L., Rocky Mount; Univ. of Pa., 1918; U.N.C.	1918	1920
Kornegay, Lemuel W., Rocky Mount, (Hon.); N. C. Med. Coll., 1906	1906	1906
Lane, John L., Rocky Mount; N. C. Med. Coll., 1906	1906	1914
Martin, J. H., Red Oaks; Univ. of Nashville, 1903	1904	1916
Noell, R. H., Rocky Mount; Univ. of Md., 1916	1916	1920
Norfleet, A. C., Tarboro; Univ. of Pa., 1924; U.N.C.	1925	1927
Norton, Roy, Rocky Mount; Vanderbilt, 1928; U.N.C.	1928	1932
Pearson, H. O., Pinetops; Med. Coll. of Va., 1926	1927	1928
Perry, E. M., Rocky Mount; P. & S., Balt., 1907	1907	1920
Raby, J. G., Tarboro; Univ. Coll. of Med., 1911	1911	1912
Ray, J. C., Whitakers; Med. Coll. Va., 1909	1909	1935
Royster, Thos. H., Tarboro; Univ. Coll. of Med., 1908, OALR	1908	1914
Smith, C. T., Rocky Mount; Univ. of Pa., 1918; U.N.C.	1918	1920
Staley, S. Walter, Rocky Mount; Med. Coll. of S. C., 1901; U.N.C.	1901	1914
Walker, Robert J., Jr., Tarboro; Med. Coll. Va., 1932	1934	1935
Wall, W. S., Rocky Mount; Univ. of Pa., 1933	1933	1936
Whitaker, J. Allen, Rocky Mount; Temple, 1933	1934	1935
Willis, B. C., Rocky Mount; Med. Coll. of Va., 1909	1916	1916

FORSYTH COUNTY SOCIETY

President: S. W. Hurdle, Winston-Salem; Jeff. Med. Coll., 1914	1914	1915
Secretary: Paul A. Yoder, Winston-Salem; Univ. Pa., 1923; U.N.C.	1923	1925
Ader, O. L., Walkertown; Univ. of Pa., 1925	1925	1927
Beavers, J. W., Kernersville; Univ. of Pa., 1930	1930	1935
Belton, J. F., Winston-Salem; Univ. of Pa., 1914	1914	1916
Bowers, M. A., Winston-Salem; Tulane Univ., 1911; U.N.C.	1911	1914
Bradford, G. E., Winston-Salem; Univ. of Tenn., 1933	1933	1936
Brooks, E. Bruce, Winston-Salem; Duke, 1933	1935	1936
Brown, F. B., Winston-Salem; Univ. of Ga., 1926	1926	1930
Butler, Leroy J., Winston-Salem; Med. Coll. of Va., 1915	1920	1921
Carlton, Romulus L., Winston-Salem, (Hon.); Univ. of Md., 1906	1906	1906
Casstevens, J. C., Clemmons; Va. Med. Coll., 1926	1926	1927
Combs, Fieldings, Winston-Salem; Med. Coll. of Va., 1923	1931	1932

Name and Address	Licensed	Joined State Society
Cook, J. L., Winston-Salem; Univ. of Pa., 1925; U.N.C.	1925	1927
Cooke, G. C., Winston-Salem; Univ. of Md., 1919; U.N.C.	1919	1920
Couch, V. F., Winston-Salem; P. and S., New York, 1911	1911	1919
Craig, S. D., Winston-Salem; Tulane Univ., 1908	1911	1912
Dalton, Wm. N., Winston-Salem, (Hon.); N. C. Med. Coll., 1904	1904	1905
Davis, Thos. W., Winston-Salem, (Hon.); S. C. Med. Coll., 1898; U.N.C.	1899	1899
DeLaney, C. O., Winston-Salem; Jefferson, 1919; U.N.C.	1919	1922
Dodge, Eva F., Winston-Salem; Med. Coll. Univ. of Md., 1925	1932	1932
Drummond, C. S., Winston-Salem; 1930	1933	1933
Fearington, J. C. P., Winston-Salem; Rush Med. Coll., 1930; U.N.C.	1933	1934
Garvey, Fred K., Winston-Salem; Univ. of Cincinnati, 1925; U.N.C.	1925	1933
Garvey, R. R., Winston-Salem; N. C. Med. Coll., 1915	1915	1919
Gilbert, E. L., Winston-Salem; Univ. of Tenn., 1931	1934	1936
Gray, Eugene Price, Winston-Salem; Johns Hopkins, 1906	1907	1908
Grimes, W. L., Winston-Salem; Johns Hopkins, 1910	1910	1915
Hart, O. J., Winston-Salem; Med. Coll. of S. C., 1925	1930	1932
Hege, J. Roy, Winston-Salem; Univ. of Md., 1916; U.N.C.	1916	1917
Helsabeck, B. A., King; Med. Coll. Va., 1931	1931	1936
Helsabeck, R. S., King; N. C. Med. Coll., 1913	1913	1936
Helsabeck, Chester J., Walnut Cove; Univ. of Md., 1919	1919	1936
Holleman, Charles, Winston-Salem; Jeff., 1932	1932	1933
Holmes, George W., Winston-Salem; Med. Coll. Va., 1931	1931	1933
Johnson, Paul W., Winston-Salem, 1930; Univ. of Louisville	1932	1933
Johnson, Wingate M., Winston-Salem; Jeff. Med. Coll., 1908	1908	1911
Jones, Beverly N., Winston-Salem; Med. Coll. of Va., 1915	1915	1921
Jones, R. Rives, Winston-Salem; Med. Coll. of Va., 1923	1923	1925
Keiger O. R., Winston-Salem; Univ. Coll. of Med., Richmond, 1911; U.N.C.	1911	1915
Kerr, Jas. Edwin, Winston-Salem, (Hon.); Univ. of Md., 1897	1898	1898
Kirby, W. L., Winston-Salem; Vanderbilt, 1925	1926	1930
Lancaster, R. M., Rural Hall; N. C. Med. Coll., 1914	1916	1936
Lassiter, V. C., Winston-Salem; Emory Univ., 1925	1928	1929
Linville, Aaron Y., Winston-Salem, (Hon.); Univ. of N. Y., 1889	1889	1896
Long, Vann McKee, Winston-Salem; N. C. Med. Coll., 1906	1906	1908
McCants, C. H., Winston-Salem; Med. Coll. of S. C., 1925	1929	1931
Marshall, J. F., Winston-Salem; Univ. of Pa., 1931	1931	1935
Moore, R. A., Winston-Salem; N. C. Med. Coll., 1911	1911	1917
Paddison, Jno. Robt., Kernersville, (Hon.); Univ. of Md., 1902; U.N.C.	1902	1904
Pegg, F. G., Winston-Salem; Med. Coll. Va., 1934	1935	1936
Pepper, John Kerr, Winston-Salem; P. and S., Balt., 1907	1908	1908
Perkins, J. R., Winston-Salem; Va. Med. Coll., 1904	1910	1917
Pfohl, Samuel F., Winston-Salem, (Hon.); Univ. of Pa., 1894	1898	1898
Pool, B. B., Winston-Salem; Jeff. Med. Coll., 1923	1923	1925
Poole, C. Glenn, Winston-Salem; Tulane, 1924	1924	1927
Pulliam, B. E., Winston-Salem; Jeff. Med. Coll., 1928	1928	1931
Rankin, S. W., Winston-Salem; Jeff. Med. Coll., 1912	1912	1914
Schallert, P. O., Winston-Salem; Univ. of Ill. Med. Dept., 1904	1911	1912
Simmons, R. R., Winston-Salem; Va. Med. Coll., 1917	1923	1924
Sink, V. Rex, Winston-Salem; Univ. of Pa., 1928	1930	1935
Slate, John S., Winston-Salem, (Hon.); Univ. Coll. Med., Richmond, Va., 1900	1899	1904
Spainhour, Ellis H., Winston-Salem, (Hon.); Balt. Med. Coll., 1898	1898	1898

Name and Address	Licensed	Joined State Society
Speas, D. C., Rt. 2, Winston-Salem; Univ. of Md., 1911	1913	1924
Speas, W. P., Winston-Salem; Med. Coll. of Va., 1912	1911	1912
Spencer, Wm. O., Winston-Salem, (Hon.); Jeff. Med. Coll., 1891	1891	1894
Spicer, Richard W., Winston-Salem; N. C. Med. Coll., 1910; Univ. of Pa., 1911	1910	1916
Sprunt, W H., Jr., Winston-Salem; Univ. of Pa., 1918	1918	1925
Stone, G. E., King; Med. Coll. Va., 1915	1915	1936
Street, C. A., Winston-Salem; Harvard, 1918	1918	1925
Strickland, Edward F., Winston-Salem, (Hon.); Univ. of New York, 1887; U.N.C.	1887	1893
Tuttle, Reuben G., Winston-Salem; N. C. Med. Coll., 1909	1909	1913
Valk, A. deT., Winston-Salem; Johns Hopkins, 1910	1913	1914
Wall, R. L., Winston-Salem; Jeff. Med. Coll., 1912	1912	1914
Whittington, Jas. B., Winston-Salem; N. C. Med. Coll., 1911	1911	1913
Wyatt, Wortham, Winston-Salem; Univ. of Pa., 1913; U.N.C.	1913	1916
Wylie, W. deK., Winston-Salem; Univ. of Va., 1924	1926	1928

FRANKLIN COUNTY SOCIETY

President:	.....	.....
Secretary: James E. Fulghum, Louisburg; Med. Coll. of Va., 1931	1931	1934
Benton, Wayne J., Bunn; Syracuse Univ., 1934	1934	1936
Burt, S. P., Louisburg, (Hon.); P. and S., Balt., 1896	1896	1904
Cheves, W. G., Bunn; Jeff. Med. Coll., 1925	1925	1933
Perry, A. H., Wood; Univ. of Md. and P. and S., Balt., 1924	1924	1925
Perry, H. G., Louisburg; P. and S., Balt., 1915	1915	1916
Perry, Wm. Clifton, Louisburg; Emory Univ., 1934	1934	1936
Timberlake, C. V., Youngsville; Jefferson Med. Coll., 1915	1915	1922
Yarborough, R. F., Louisburg, (Hon.); Geo. Wash. Univ., 1898	1899	1899

GASTON COUNTY SOCIETY

President: W. M. Roberts, Gastonia; Tufts, 1925	1928	1929
Secretary: John C. Quickel, Gastonia; Univ. Pa., 1932	1932	1936
Allen, M. H., Cramerton; Emory Univ., 1929	1930	1931
Anders, McT. G., Gastonia, (Hon.); Md. Coll., 1901	1902	1902
Blair, J. L., Gastonia; Atlanta Med. Coll., 1915	1920	1921
Garrison, D. A., Gastonia, (Hon.); Louisville Med. Coll., 1896	1896	1900
Glenn, Lucius N., Gastonia, (Hon.); Univ. of Md. 1897	1897	1904
Groves, R. B., Lowell; Med. Coll. of Va., 1924	1924	1924
Hood, J. Sidney, Gastonia; Jeff. Med. Coll., 1907	1907	1910
Houser, Forest M., Cherryville; Univ. of Pa., 1928; U.N.C.	1929	1930
Jones, W. M., Gastonia; Med. Coll. S. C., 1922	1927	1928
Lyday, C. E., Gastonia; Atlanta Sch. Med., 1910	1910	1920
McAdams, C. R., Belmont; N. C. Med. Coll., 1912	1912	1916
McDowell, Harold, Gastonia	.....	1936
McDowell, R. H., Belmont; Univ. of Md., 1929; U.N.C.	1930	1931
Miller, R. C., Gastonia; N. C. Med. Coll., 1909; U. N. C.	1918	1919
Pressly, J. M., Belmont; N. C. Med. Coll., 1915	1915	1920
Pugh, Charles H., Gastonia; N. C. Med. Coll., 1910	1910	1913
Rhyne, Robt. E., Gastonia; N. C. Med. Coll., 1907	1907	1908
Swann, Jos. F., Gastonia, (Hon.); P. & S., Balt., 1896	1896	1904
Wilkins, S. A., Dallas, (Hon.); Univ. of Ky., 1902	1903	1903

GATES COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Blanchard, T. W., Hobbsville; Med. Coll. of Va., 1911	1911	1919
Carter, Thomas L., Gatesville; Med. Coll. of Va., 1917	1917	1928

GRAHAM COUNTY SOCIETY

GRANVILLE COUNTY SOCIETY

President: Joseph A. Morris, Oxford, (Hon.); Vanderbilt Univ., 1890	1893	1899
Secretary: J. C. Elliott, Oxford; Univ. of Md., 1926	1926	1928
Bradsher, J. S., Stovall; Univ. of Va., 1925	1925	1927
Carrington, S. M., Oxford; Rush Med. Coll., 1931; U.N.C.	1931	1934
Hays, B. K., Oxford, (Hon.); Univ. Coll. of Med., Va., 1894	1894	1897
Noblin, Roy L., Oxford; Med. Coll. Va., 1924	1924	1924
Taylor, R. W., Oxford; Tulane Univ., 1926	1926	1928
Taylor, Wm. L., Oxford, (Hon.); Univ. of Va., 1900	1901	1901
Thomas, Wm. N., Oxford; Va. Med. Coll., 1911	1911	1914
Thompson, Joseph W., Creedmoor; Ky. Univ., Louisville, 1904	1907	1912

GREENE COUNTY SOCIETY

President: J. H. Harper, Snow Hill; Jefferson, 1905	1906	1907
Secretary: F. W. Carroll, Hookerton; Med. Coll. of Va., 1925	1926	1927
Dawson, W. E., Hookerton; Jefferson, 1920	1920	1922
Marlowe, W. A., Walstonburg; Jeff. Med. Coll., 1919; U.N.C.	1919	1921
Murphy, W. B., Snow Hill, (Hon.); Univ. Coll. of Med., Va., 1903	1903	1905
Whittington, Wm. W., Snow Hill, (Hon.); Louisville Med. Coll., 1895	1895	1902

GUILFORD COUNTY SOCIETY

President: J. W. Tankersley, Greensboro; Jeff. Med. Coll., 1906; U.N.C.	1906	1907
Secretary: N. A. Fox, Greensboro; Univ. of Pa., 1924	1924	1926
Ashworth, W. C., Greensboro, (Hon.); P. and S., Balt., 1892	1892	1894
Aydlett, H. T., Greensboro; Univ. of Va., 1894	1895	1907
Banner, A. C., Greensboro; Jeff. Med. Coll., 1920; U.N.C.	1920	1922
Banner, Chas. W., Greensboro, (Hon.); Univ. of Md., 1899	1899	1901
Battle, John T. J., Greensboro, (Hon.); P. and S., Balt., 1884	1884	1890
Berry, John, Greensboro; Jeff. Med. Coll., 1908; U.N.C.	1908	1920
Bowman, H. P., Greensboro, (Hon.); Univ. of Tenn., 1894	1894	1905
Brockman, Harry L., High Point; Univ. of Pa., 1917; U.N.C.	1917	1921
Buie, R. M., Greensboro; Jeff. Med. Coll., 1914	1914	1920
Cole, Walter F., Greensboro; Johns Hopkins, 1909	1909	1910
Collings, Ruth M., Greensboro; Univ. of Pa., 1923	1926	1927
Cozart, S. R., Greensboro; Med. Coll. of Va., 1923	1923	1925
Davis, P. B., High Point; Jefferson, 1926; U.N.C.	1926	1929
Davis, R. B., Greensboro; Med. Coll. of Va., Richmond, 1915	1916	1917
Dees, Ralph Erastus, Greensboro; Univ. of Md., 1906	1908	1909
Dees, Rigdon O., Greensboro; Univ. of Md., 1906	1907	1908
Dick, Julius Vance, Gibsonville; Univ. of N. C., 1907	1907	1908
Durham, C. W., Greensboro; Geo. Wash. Univ., 1927	1927	1929
Edwards, V. E., Greensboro; Univ. of Md., 1913	1913	1913
Flagge, Philip W., High Point; Wash. Univ., St. Louis, 1902	1905	1919
Fortune, Alex. F., Greensboro, (Hon.); Univ. Coll. of Med., Va., 1900; U.N.C.	1900	1904

Name and Address	Licensed	Joined State Society
Gilmore, C. M., Greensboro; Med. Coll. of Va., 1925	1925	1926
Glascock, Joy H., Greensboro, (Hon.); Women's Med. Coll. of Balt., 1896	1896	1900
Gove, Anna M., Greensboro, (Hon.); Women's Med. Coll. of New York, Infirmary, 1892	1894	1896
Grayson, C. S., High Point; Geo. Wash. Univ., 1906	1907	1908
Groome, J. G., High Point; Univ. of Ohio, 1924	1924	1925
Harden, R. N., Greensboro; Univ. of Pa., 1922; U.N.C.	1922	1924
Harper, F. T., Jr., Jamestown; Med. Coll. of Va., 1934	1934	1936
Harrison, Edmund, Greensboro, (Hon.); Univ. Coll. of Med., 1896	1900	1900
Harrison, Edward T., High Point; Johns Hopkins Med. Sch., 1926	1926	1928
Harvey, W. W., Greensboro; Emory Univ., 1920	1922	1923
Hiatt, H. B., Wilmington, Masonboro Sound; Univ. of Md., 1907	1907	1910
Holt, D. W., Greensboro; Jeff. Med. Coll., 1918	1918	1920
Hudson, C. C., Greensboro; Univ. Coll. of Med. of Va., 1910	1918	1924
Jackson, Walter Leo., High Point; N. C. Med. Coll., 1911	1911	1913
Jones, Wm. M., Greensboro, (Hon.); Univ. of Md., 1903	1903	1903
Keiger, James A., Greensboro; Univ. of Va., 1916	1916	1919
Keith, Marion Y., Greensboro; Univ. of Md., 1923	1923	1927
Knight, Wm. P., (Hon.), Greensboro; Balt. Med. Coll., 1898	1898	1898
Le Bauer, S. F., Greensboro; Univ. of Va., 1929	1930	1932
Long, E. F., High Point; Med. Coll. of Va., 1909	1909	1912
Lyday, R. O., Greensboro; Univ. of Pa., 1920; U.N.C.	1920	1927
Lyon, B. R., Greensboro; Columbia Univ., 1915	1920	1920
McAnnally, Wm. J., High Point, (Hon.); Balt. Med. Coll., 1897	1896	1899
McCain, Wm. R., High Point, (Hon.); Univ. of Md., 1897; U.N.C.	1898	1898
Maness, A. K., Greensboro; Jeff. Med. Coll., 1928; U.N.C.	1928	1929
Mann, I. Thurman, High Point; Jeff. Med. Coll., 1912	1912	1915
Meadows, W. J., Greensboro, (Hon.); Med. Coll. of Ala., 1894	1899	1904
Moseley, Charles W., Greensboro, (Hon.); Balt. Med. Coll., 1893	1893	1896
Ogburn, H. H., Greensboro; Johns Hopkins Univ., 1913; U.N.C.	1913	1914
Ownbey, Arthur D., Greensboro; Med. Coll. Va., 1920	1925	1927
Pate, F. J., Greensboro; Univ. of Md., and P. and S., Balt., 1908	1908	1915
Parker, H. R., Greensboro; Univ. of Syracuse, 1923	1924	1925
Perry, G. G., High Point; Med. Coll. of Va., 1933	1933	1934
Post, J. J., Greensboro; Columbia Univ., 1919	1925	1926
Prefontaine, E., Greensboro; Laval Univ., Quebec, 1927	1931	1934
Ravenel, S. F., Greensboro; Johns Hopkins, 1923	1923	1926
Reaves, W. P., Greensboro; Univ. of the South, 1903	1905	1907
Reitzel, Claude E., High Point, (Hon.); P. and S., Atlanta, 1902	1902	1902
Rhudy, Booker E., Greensboro; Med. Coll. Va., 1916	1926	1927
Saunders, S. Stewart, High Point; Harvard Med. School, 1924	1926	1927
Schoonover, R. A., Greensboro; Baltimore Med. Coll., 1905	1912	1912
Shelburne, P. A., Greensboro; Univ. of Va., 1927	1928	1928
Slate, M. L., High Point; Univ. of Md., 1931	1931	1934
Smith, Alick T., Greensboro; Med. Coll. of Va., 1908	.....	1913
Starr, H. F., Greensboro; Jeff. Med. Coll., 1916; U.N.C.	1916	1917
Stanton, D. A., High Point, (Hon.); Vanderbilt Univ., 1887	1887	1891
Sumner, E. A., High Point; Baylor Univ., Tex., 1925	1926	1927
Taylor, F. R., High Point; Univ. of Pa., 1913	1913	1915
Taylor, Jas. T., Greensboro; Univ. of Mo.; Coll. of P. and S., Balt., 1908	1908	1910
Taylor, S. R., Greensboro; Univ. of Pa., 1921; U.N.C.	1921	1924
Thomas, J. G., Greensboro; Med. Coll. Va., 1915	1915	1920

Name and Address	Licensed	Joined State Society
Thompson, C. D., High Point, (Hon.); Univ. of Tenn., 1901	1901	1904
Whittington, Claude, Greensboro; Univ. of Md., 1927	1927	1929
Williams, John D., Guilford Station, (Hon.); Vanderbilt Univ., 1898	1898	1898
Williams, J. D., Jr., Stokesdale; W. Md., 1930; Temple, 1930	1931	1935
Wilson, Albert R., Greensboro, (Hon.); Jeff. Med. Coll., 1882; U.N.C.	1882	1882
Wolfe, H. C., Greensboro; Med. Coll. of Va., 1917	1917	1920
Wolff, D. R., Greensboro; Jeff. Med. Coll., 1918	1918	1920
Woodruff, Fred G., High Point; Med. Coll. of Va., 1917	1917	1919
York, Alexander A., High Point; Chattanooga Med. Coll., 1907	1907	1909

HALIFAX COUNTY SOCIETY

President: C. H. Neville, Scotland Neck; Tulane Univ., 1927	1927	1927
Secretary: R. S. McGeachy, Weldon, (Hon.); Bellevue Hosp., 1894	1894	1895
Beckwith, R. P., Roanoke Rapids; Univ. of Pa., 1911	1913	1916
Covington, J. M. C., Roanoke Rapids	.....	1933
Jarman, F. G., Roanoke Rapids; Univ. Coll. of Med., Va., 1911	1914	1916
Joyner, P. W., Enfield; Syracuse Univ., 1932	1932	1935
Justice, L. H., Littleton; Med. Coll. of Va., 1916	1920	1920
Lassiter, H. G., Weldon; Jeff. Med. Coll., 1918; U.N.C.	1918	1920
Long, T. W. M., Roanoke Rapids; Univ. Coll. of Med., Va., 1908; U.N.C.	1909	1910
Martin, J. W., Roanoke Rapids; Med. Coll. of Va., 1916	1919	1920
Nicholson, B. M., Enfield; Va. Univ. Coll. of Med., 1910	1910	1913
Palmer, Horace, Littleton; Atl. Sch. of Med., 1912	1912	1920
Smith, O. F., Scotland Neck; Univ. Coll. of Va., 1899; U.N.C.	1899	1904
Suiter, W. G., Weldon; Med. Coll. of Va., 1917	1917	1920
Thigpen, H. G., Scotland Neck; Jeff. Med. Coll., 1917; U.N.C.	1917	1920
Weathers, Bahnson, Roanoke Rapids; Wash. Univ. Med. School, St. Louis, 1917	1921	1922
White, Francis W. M., Halifax; Richmond Med. Coll., 1924	1924	1924

HARNETT COUNTY SOCIETY

President: Wm. P. Holt, Jr., Erwin; Jeff. Med. Coll., 1926; U.N.C.	1926	1927
Secretary: A. T. Wyatt, Lillington; Jeff. Med. Coll., 1919	1919	1927
Halford, Jos. W., Lillington, (Hon.); Geo. Wash. Univ., 1904	1905	1905
Hicks, Isham Faison, Dunn, (Hon.); N. C. Med. Coll., 1902	1902	1904
Highsmith, Charles, Dunn, (Hon.); Balt. Med. Coll., 1898	1898	1898
Holt, Wm. P., Erwin, (Hon.); Jeff. Med. Coll., 1895	1895	1901
McKay, Joseph F., Buie's Creek, (Hon.); S. C. Med. Coll., 1884	1885	1900
McLean, John W., Godwin, (Hon.); N. C. Med. Coll., 1902	1902	1906
Martin, J. F., Dunn; N. C. Med. Coll., 1905	1905	1918
Melvin, Wayman C., Linden, (Hon.); Univ. Coll. of Med., Richmond, 1900	1900	1905

HAYWOOD COUNTY SOCIETY

President: J. F. Pate, Canton; Med. Coll. of S. C., 1927	1927	1929
Secretary: V. H. Duckett, Canton; Univ. of Pa., 1930	1930	1932
Abel, J. F., Waynesville, (Hon.); Univ. of Balt., 1892	1893	1899
Johnson, W. C., Canton; Tulane Univ. of La., 1912; U.N.C.	1912	1917
Kirkpatrick, W. L., Waynesville; Univ. Vanderbilt, 1894	1894	1895
Lancaster, N. F., Waynesville; Med. Coll. of Va., 1931	1932	1933
McCracken, J. R., Waynesville, (Hon.); N. C. Med. Coll., 1902	1902	1903

Name and Address	Licensed	Joined State Society
McCracken, M. H., Canton; Univ. Louisville, 1930	1930	1933
Moore, Roy H., Canton; Washington Univ., 1931; U.N.C.	1931	1934
Osborne, Gladys H., Waynesville; Vanderbilt, 1932	1935	1936
Owen, M. L., Canton; Univ. of Pa., 1932	1932	1936
Owen, Robert H., Canton; Univ. of Pa., 1931	1931	1935
Reeves, J. L., Canton; Vanderbilt, 1913	1913	1917
Robinson, Robt. S., Hazelwood; Med. Coll. of Va., 1930	1930	1932
Russell, Jesse M., Canton; Univ. of Nashville, 1911	1911	1912
Sisk, C. N., Waynesville; Univ. of Nash., 1905	1922	1923
Smith, D. W., Waynesville; Harvard, 1931	1935	1936
Stretcher, R. H., Waynesville; Rush Med. Coll., Chicago, 1927	1927	1930
Stringfield, Samuel L., Waynesville; Jeff. Med. Coll., 1905; U.N.C.	1905	1907
Stringfield, Thomas, Waynesville, (Hon.); Vanderbilt Univ., 1898; U.N.C.	1898	1899
Westmoreland, J. R., Canton; Washington Univ., 1932; U.N.C.	1932	1934

HENDERSON COUNTY SOCIETY

President:	.....	.....
Secretary: Robt. Hyatt Brown, Hendersonville; Jeff. Med. Coll., 1930; U.N.C.	1933	1934
Bliss, F. E., Fletcher; Coll. of Med. Evangelists, 1933	1933	1934
Brown, J. S., Hendersonville, (Hon.); Northwestern Univ., 1893	1894	1895
Brown, J. S., Jr., Hendersonville; Univ. of Tulane, 1925	1926	1927
Dixon, Guy E., Hendersonville, (Hon.); P. and S., St. Louis, 1903	1903	1903
Fauntleroy, Jas. W., Saluda; P. and S., Columbia	1900	1930
Kirk, W. R., Hendersonville, (Hon.); Central Univ., 1891	1901	1903
Russell, Lloyd P., Fletcher; Univ. Nashville, 1901	1902	1903
Salley, E. McQueen, Hendersonville, (Hon.); Univ. of Md., 1905	1905	1906
Sample, R. C., Hendersonville; Univ. of Pa., 1915; U.N.C.	1915	1919
Trotter, Fred O., Hendersonville; Univ. of Minnesota, 1933	1934	1934
Weddington, J. L., Hendersonville; Sou. Med. Coll., Atlanta, 1898	1925	1926
Woodcock, J. H., Hendersonville; Hosp. College of Med., 1892	1894	1899

HERTFORD COUNTY SOCIETY

President:	.....	.....
Secretary: D. W. Ruffin, Ahoskie; Med. Coll. of Va., 1932	1932	1932
Futrell, L. M., Murfreesboro; Va. Med. Coll., 1914; U.N.C.	1914	1918
Matheson, J. Gaddy, Ahoskie; Jeff., 1929; U.N.C.	1929	1931
Walker, L. K., Ahoskie; Univ. of Md., 1911; U.N.C.	1911	1917

HOKE COUNTY SOCIETY

President: A. Papineau, Sanatorium; Univ. of Pa., 1931	1933	1934
Secretary: R. L. Murray, Raeford; Univ. of Md., 1923	1923	1925
Bittinger, S. M., Sanatorium; Geo. Wash. Univ., 1918	1924	1924
Brown, G. W., Raeford, (Hon.); Ky. School of Med., Louisville, 1898	1900	1900
McBrayer, L. B., Southern Pines, (Hon.); Louisville Med. Coll., 1889	1891	1900
McBrayer, R., N. Y. City, N. Y.; Univ. of Pa., 1916	1916	1917
McCain, P. P., Sanatorium; Univ. of Md. and Coll. P. and S., Balt., 1911	1914	1914
Matheson, R. A., Raeford; Jeff. Med. Coll., 1926	1926	1928
Ormand, A. L., Sanatorium; Jefferson, 1930	1930	1935
Plyler, M. T., Sanatorium; Duke Univ., 1933	1935	1936
Seay, Hillis L., Sanatorium; Vanderbilt Univ., 1930	1933	1934

Name and Address	Licensed	Joined State Society
Thomas, C. D., Sanatorium; Univ. of Indiana, 1926	1930	1930
Williams, J. H., Sanatorium; Jeff. Med. Coll., 1920	1920	1922

HYDE COUNTY SOCIETY

IREDELL-ALEXANDER COUNTIES SOCIETY

President: M. B. Clayton, Statesville; Univ. Louisville, 1917	1933	1935
Secretary: Chas. B. Herman, Statesville; Jeff. Med. Coll., 1923; U.N.C.	1923	1925
Asburn, C. W., Statesville; Wash. Univ., 1927	1927	1928
Bell, A. E., Mooresville, (Hon.); Univ. of Md., and Coll. of P. and S., 1897	1897	1904
Crouch, T. D., Stony Point; N. C. Med. Coll., 1909, and Univ. of Md., 1910	1909	1915
Davis, Jas. W., Statesville; Univ. of Pa., 1913; U.N.C.	1913	1915
Edwards, A. M., Taylorsville; Emory Univ., 1907	1907	1934
Gibson, L. O., Statesville; N. C. Med. Coll., 1913	1913	1915
Gilmore, W. D., Tombstone, Ariz.; Univ. of N. C., 1903	1903	1904
Goode, T. V., Statesville; Univ. Coll. of Med., Va., 1912	1912	1916
Grady, F. M., Mooresville; Univ. of Syracuse	1932	1934
Hinson, Angus, Statesville; Univ. Va., 1931	1935	1936
Holbrook, J. Samuel, Statesville	.....	1933
Jurney, Peter C., Turnersburg; Med. Coll. of Va., 1901	1901	1904
Leeper, Donald H., Hiddenite; N. C. Med. Coll., 1906	1906	1913
Little, Lonnie M., Statesville; Jeff. Med. Coll., 1925; U.N.C.	1925	1927
Long, H. F., Statesville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Long, Wm. Matthews, Mocksville; Tulane Univ., 1933	1934	1934
McElwee, Ross S., Statesville; Univ. of Md., 1909	1909	1910
McLaughlin, J. E., Statesville, (Hon.); Univ. of Md., 1886	1886	1896
McLelland, W. D., Mooresville; Jeff. Med. Col., 1913	1913	1917
Morrison, James Rudy, Statesville; Georgetown Med., 1934	1935	1936
Myers, D. L., Jennings; Tulane, 1925	1928	1929
Ogburn, L. C., Hamptonville; Jefferson, 1928	1928	1935
Pressly, Jas. L., Statesville; Jeff. Med. Coll,, 1925	1925	1928
Price, H. L., Taylorsville; N. C. Med. Coll., 1914	1914	1930
Rhyne, S. A., Statesville; N. C. Med. Coll., 1915	1915	1920
Robertson, J. M., Charles	.....	1934
Shaw, L. R., Statesville; Med. Coll. of Va., 1930	1930	1931
Sharpe, Frank L., Statesville, (Hon.); Univ. of N. C., 1904	1904	1905
Sherrill, C. L., Statesville; N. C. Med. Coll., 1914	1914	1915
Sloan, A. B., Mooresville; Med. Coll. of Va., 1924	1924	1926
Talley, J. S., Troutman; Univ. of N. C., 1909	1910	1917
Tatum, Roy C., Statesville; Jeff. Med., 1919	1919	1920
Taylor, G. W., Mooresville; N. C. Med. Coll., 1906	1906	1917
Templeton, J. Y., Mooresville; Jeff. Med. Coll., 1912	1913	1927
Thurston, Asa, Taylorsville; Univ. of Md., 1909	1909	1914
Trivette, W. A., Houstonville; Med. Coll. of Va., 1916	1916	1925
Wilson, Frank E., Mooresville; Univ. Tenn., 1933	1935	1935

JACKSON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Nichols, A. A., Sylva; Univ. of Nashville, 1898	1904	1904
Nichols, Asbury S., Sylva; Tenn. Med. Coll., 1906	1907	1913

Name and Address	Licensed	Joined State Society
Stoddard, James Kent, Cashiers; Johns Hopkins, 1916	1925	1935
Wilkes, Grover C., Sylva; N. C. Med. Coll., 1916	1916	1920

JOHNSTON COUNTY SOCIETY

President: Edwin N. Booker, Selma; Univ. of Va., 1925	1925	1930
Secretary: J. G. Upchurch, Smithfield	.....	1935
Aycock, F. M., Princeton; Med. Coll. of Va., 1921	1921	1926
Davidian, Vartan A., Smithfield; Univ. Kiev, Russia	1929	1930
Duncan, S. A., Benson; Tulane Univ., 1924	1924	1926
Coleman, G. S., Raleigh; Med. Coll. of Va., 1907	1907	1909
Fitzgerald, J. Herbert, Smithfield; Jeff. Med. Coll., 1920	1920	1922
Grady, Jas. C., Kenly, (Hon.); Balt. Univ. School of Med., 1887	1887	1890
Hocutt, Battle A., Clayton; Univ. of N. C., School of Med., 1906	1906	1908
Person, J. B., Selma. (Hon.); Med. Coll. of Va., 1897	1897	1900
Rose, A. H., Smithfield; Jeff. Med. Coll., 1906; U.N.C	1906	1907
Wilson, W. G., Smithfield; Jeff. Med. Coll., 1921; U.N.C	1921	1924

JONES COUNTY SOCIETY

President:	.....	.....
Secretary: J. C. Bell, Maysville; P. and S., Balt., 1910	1915	1922
Hammond, A. F., Polloksville; Univ. Coll. of Med., Va., 1903	1903	1914
Page, B. W., Trenton; Tulane Univ., 1909	1909	1919

LEE COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
James, Arthur A., Jr., Sanford; Univ. of Pa., 1932	1932	1936
McIver, Lynn, Sanford, (Hon.); Kentucky Univ., 1901; U.N.C	1902	1902
Matthews, M. L., Sanford, (Hon.); Univ. of N. C., 1903	1903	1904

LENOIR COUNTY SOCIETY

President: R. G. Tyndall, Kinston; Univ. of Pa., 1928	1928	1931
Secretary: Rachel D. Davis, Kinston; Women's Med. Coll. of Pa., 1932	1933	1934
Boney, Elwood R., Kinston; Univ. of Pa., 1926; U.N.C	1926	1927
Carr, M. L., LaGrange; Med. Coll. of Va., 1916	1916	1920
Cranz, Oscar W., Kinston; Med. Coll. Va., 1931	1934	1936
Davenport, Eleanor, Kinston; Women's Med. Coll. Pa., 1932	1934	1936
Hardy, Ira M., Kinston, (Hon.); Med. Coll. of Va., 1901; U.N.C	1902	1902
Keiter, W. E., Kinston; Vanderbilt	1935	1935
Lee, Mike, Kinston; Tulane Univ., 1926	1926	1927
Lee, Thos. L., Kinston; Med. Coll. Va., 1926	1926	1927
Moseley, Z. V., Kinston; Va. Coll. of Med., 1913	1913	1914
Page, R. C., Kinston; Syracuse Univ., 1928	1935	1936
Parrott, M. C., Kinston; Tulane Univ., 1917; U.N.C	1917	1919
Parrott, Wm. P., Kinston, (Hon.); Tulane Univ., 1899	1899	1901
Peery, Vance P., Kinston; Med. Coll. of Va., 1916	1917	1917
Register, F. M., Kinston, (Hon.); Ky. School of Med., 1893	1891	1904
Sabiston, Frank, Kinston; Univ. of Md., 1918; U.N.C	1919	1926
Turrentine, Kilby P., Kinston; Rush Med. Coll., 1931; U.N.C	1932	1933
West, B. C., Kinston; Univ. of Pa., 1924; U.N.C	1924	1926
West, C. F., Kinston; Univ. of Pa., 1917; U.N.C	1917	1920
Whitaker, Paul F., Kinston; Med. Coll. of Va., 1922; U.N.C	1922	1924
Wooten, Floyd P., Kinston; Jeff. Med. Coll., 1920; U.N.C	1920	1923

LINCOLN COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary: L. A. Crowell, Jr., Lincolnton; Tulane Med. Dept., 1930; U.N.C.	1930	1930
Bandy, W. G., Lincolnton; Vanderbilt Univ., 1908	1912	1914
Cornwell, A. M., Lincolnton; Geo. Wash. Univ., 1927	1927	1928
Crowell, L. A., Lincolnton, (Hon.); Balt. Med. Coll., 1892	1892	1898
Edwards, F. D., Lawndale, R. 1; Atlanta Med., 1914	1916	1919
Elliott, W. F., Lincolnton; Pa. Medico-Chir. Coll., 1916; U.N.C.	1916	1917
Hoover, C. H., Crouse, (Hon.); Chattanooga Med. Coll., 1900; Balt. Med. Coll., 1903	1903	1903
Jacocks, W. P., Delhi, India; Univ. of Pa., 1911; U.N.C.	1911	1913

MACON-CLAY COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Angel, Edgar, Franklin; Jeff. Med. Coll., 1928	.....	1932
Angel, Furman, Franklin; Jeff. Med. Coll., 1918; U.N.C.	1923	1924
Fouts, J. H., Franklin; Vanderbilt Univ., 1895	1895	1918
Killian, Frank M., Franklin; Univ. of Louisville, 1929	1929	1930
Rogers, W. A., Franklin, (Hon.); Univ. of Nashville, 1898	1898	1898

MADISON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
McElroy, J. L., Marshall; Washington Univ., 1930; U.N.C.	1930	1932

MARTIN-WASHINGTON-TYRRELL COUNTIES SOCIETY

President: T. L. Bray, Plymouth; Univ. of Md., 1916	1916	1919
Secretary: J. A. Eason, Williamston; Med. Coll. Va., 1932	1933	1934
Chaplin, S. C., Columbia	.....	.....
Evans, W. F.	.....	1936
Nelson, Robert J., Robersonville, (Hon.); Louisville Med. Coll., 1890	1890	1893
Pittman, E. E., Oak City; Med. Coll. of Va., 1919	1919	1920
Rhodes, James S., Williamston; Med. Coll. of Va., 1906	1906	1907
Saunders, Jos. H., Williamston; Univ. Coll. of Med., Va., 1905	1905	1909
Smithwick, James E., Jamesville, (Hon.); Univ. Coll. of Med., 1897	1897	1904
Ward, Jesse E., Robersonville; Univ. of Md., 1904; U.N.C.	1904	1905

McDOWELL COUNTY SOCIETY

President:	.....	.....
Secretary: D. M. McIntosh, Jr., Marion; Univ. of Pa., 1933	1935	1936
Ashworth, B. L., Marion, (Hon.); P. and S., Balt., 1892	1893	1900
Butt, R. B., Marion; Emory Univ., Atlanta, 1920	1920	1921
Jonas, John F., Marion, (Hon.); Balt. Med. Coll., 1903	1903	1903
Justice, Gaston B., Marion; P. and S., Atlanta, 1907; U.N.C.	1907	1907
Kirby, Guy S., Marion, (Hon.); Univ. Coll. of Va., 1897	1896	1903
McIntosh, D. M., Old Fort; Med. Coll. of Va., 1904	1907	1909
Miller, J. F., Marion Med. Chi. Phila., 1906	1915	1919
Wood, Frank, Marion; Univ. of Pa., 1928	1931	1932
Wood, Martha, Marion; Univ. Pa., 1928	1934	1935

MECKLENBURG COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: Hamilton W. McKay, Charlotte; N. C. Med. Coll., 1909; Jeff. Med. Coll., 1910	1911	1913
Secretary: Stephen W. Davis, 501 Professional Bldg., Charlotte, N. C.; Univ. of Pa. Med. School, 1927; U.N.C.	1927	1929
Abernathy, H. N., Charlotte, (Hon.); Louisville Med. Coll., 1894	1894	1899
Adams, J. R., Charlotte; Univ. of Va., 1928	1932	1933
Alexander, Jas. R., Charlotte, (Hon.); Univ. of Md., 1894	1894	1899
Allan, William, Charlotte; P. and S., Balt., 1906	1906	1914
Allen, Sylvia, Charlotte; Columbia Univ., 1926	1932	1933
Ashe, J. R., Charlotte; Columbia Univ., 1911	1915	1915
Barron, A. A., Charlotte; Vanderbilt Univ., 1909	1910	1910
Baxter, Oscar Dixon, Charlotte; Jeff. Med. Coll., 1924	1924	1928
Black, Geo. Wm., Charlotte; Med. Coll. of Va., 1924	1924	1925
Blair, Andrew, Charlotte; U. of Pa., 1924	1925	1926
Bost, T. C., Charlotte; Geo. Washington Univ., 1915	1920	1921
Bradford, W. Z., Charlotte; Univ. of Pa., 1928	1928	1930
Brenizer, A. G., Jr., Charlotte; Johns Hopkins, 1908, and Univ. of Heidelberg; U.N.C.	1911	1911
Britt, C. S., Charlotte; Emory Univ., 1920	1925	1926
Bunch, Charles, Charlotte; U. N. C., 1931	1931	1935
Chambers, P. J., Charlotte; Jeff. Med. Coll., 1929	1932	1933
Choate, A. B., Charlotte; Med. Coll. of Va., 1929	1929	1933
Craven, Thomas, Huntersville; Jeff. Med. Coll., 1917; U.N.C.	1917	1918
Crowell, Andrew J., Charlotte, (Hon.); Univ. of Md., 1893	1892	1894
Davis, T. M., Charlotte; Univ. of Md., 1914	1931	1933
De Armon, J. McC., 4 McKinnon Bldg., Charlotte, (Hon.); Univ. of Md., 1886	1886	1887
Elliott, J. A., Charlotte; Univ. of Mich., 1914	1919	1920
Faison, Elias, Charlotte; Emory Univ., 1929	1929	1933
Faison, Yates W., Charlotte; Harvard Univ., 1910	1910	1912
Ferguson, R. T., Charlotte; Univ. Coll. of Va., 1906	1909	1909
Fleming, L. E., Charlotte; Univ. of Pa., 1931	1931	1934
Franklin, Ernest W., Charlotte; Univ. of Pa., 1930; U.N.C.	1930	1932
Gage, L. G., Charlotte; Univ. of Va., 1915	1921	1922
Gallant, Robert M., Charlotte; N. C. Med. Coll., 1915	1915	1916
Gaul, John Stuart, Charlotte; Medico-Chir., Phila., 1913	1922	1923
Gibbon, James W., Charlotte; Jeff. Med. Coll., 1918	1920	1921
Gibbon, Robert L., Charlotte, (Hon.); Jeff. Med. Coll., 1887	1887	1888
Hamer, W. A., Chadwick Station, Charlotte; Univ. of Md., 1930	1930	1932
Hand, Edgar H., Charlotte; N. C. Med. Coll., 1907	1907	1913
Hart, V. K., Charlotte; Univ. of Pa., 1921	1924	1925
Hipp, Edw. R., Charlotte; Univ. of Va., 1918	1920	1921
Houser, O. J., Charlotte; N. C. Med. Coll., 1914	1914	1916
Hovis, L. W., Charlotte, (Hon.); N. C. Med. Coll., 1904; U.N.C.	1904	1906
Hunt, J. S., Charlotte; Vanderbilt Univ., 1929	1932	1933
Hunter, W. Myers, Charlotte; Georgetown Univ., 1905	1906	1908
Johnston, J. G., Charlotte; Med. Dept., Vanderbilt Univ., 1899	1913	1916
Kennedy, John P., Charlotte; Jeff. Med. Coll., 1915	1915	1920
King, Parks M., Charlotte, (Hon.); Bellevue Med. Coll., 1902	1902	1904
Lafferty, Robert H., Charlotte; N. C. Med. Coll., 1906	1906	1906
Leinbach, Robt. F., Charlotte; Univ. of Pa., 1907; U.N.C.	1907	1910
Lucas, Chas. De Forrest, Charlotte; Univ. Va., 1926	1934	1935

Name and Address	Licensed	Joined State Society
MacConnell, John W., Davidson; Univ. of Md., 1907	1908	1909
McCoy, Thos. M., Charlotte; N. C. Med. Coll., 1905	1906	1910
McGregor, Geo. D., Charlotte; Univ. of Va., 1925	1927	1928
McKay, Robert W., Charlotte; Johns Hopkins, 1923	1928	1928
McKnight, R. B., Charlotte; Univ. of Pa., 1920	1920	1928
McLaughlin, Calvin S., Charlotte, (Hon.); Univ. of Md., 1896	1896	1903
McLean, E. K., Charlotte; Univ. of Texas, 1919	1927	1928
McLeskey, J. H., Charlotte; Univ. of Ga., 1909	1927	1928
McPhail, L. D., Charlotte, (Hon.); Univ. of Md., 1900; U.N.C.	1900	1902
Martin, Wm. F., Charlotte; Univ. of Md., 1920	1920	1923
Martin, W. J., Greensboro; Univ. of Va., 1890	1891	1919
Massey, C. C., Charlotte; Jeff. Med. Coll., 1923	1923	1925
Matheson, James P., Charlotte, (Hon.); Univ. of Md., 1905	1902	1907
Mathews, Vann M., Charlotte; Univ. of Pa., 1918	1918	1921
Mayer, W. B., Charlotte; Univ. of Pa., 1930	1932	1933
Miller, Oscar L., Charlotte; Atlanta Coll. of P. and S., 1912	1921	1922
Montgomery, J. C., Charlotte; Univ. of Pa., 1932	1935	1936
Moore, Alexander W., Charlotte; Univ. of Va., 1901; Univ. and Bellevue Hosp. Med. Coll., 1902	1912	1913
Moore, Oren, Charlotte; N. C. Med. Coll., 1911	1911	1912
Moore, R. A., Charlotte; Univ. of Pa., 1923	1924	1925
Motley, Fred Elliott, Charlotte; Univ. of Mich., 1922	1926	1927
Munroe, H. Stokes, Charlotte; N. C. Med. Coll., 1902; Jeff. Med., 1903	1902	1904
Munroe, J. P., Charlotte, (Hon.); Univ. of Va., 1885	1886	1890
Myers, Alonzo, Charlotte; N. C. Med. Coll., 1911; Bellevue Hosp. Med. Coll., 1916	1911	1920
Myers, John Q., Charlotte, (Hon.); N. C. Med. Coll., 1904	1904	1904
Nalle, B. C., Charlotte, (Hon.); Univ. of Va., 1903	1905	1905
Nance, C. L., Charlotte; N. C. Med. Coll., 1919	1921	1922
Neblett, H. C., Charlotte; Med. Coll. of Va., 1914	1921	1929
Newell, Leon B., Charlotte; Univ. of N. C., 1905; U.N.C.	1905	1908
Newton, Howard L., Charlotte; Northwestern Univ., 1921	1923	1924
Nisbet, D. Heath, Charlotte; Harvard Med. Dept., 1917	1917	1920
Nisbet, Walter O., Charlotte, (Hon.); Med. Coll. of S. C., 1889	1889	1889
Northington, J. M., Charlotte; Med. Coll. of Va., 1905	1909	1909
Nowlin, Preston, Charlotte; Univ. of Va., 1924	1929	1930
Patterson, Reid, Charlotte; N. C. Med. Coll., 1912	1912	1913
Peeler, Clarence N., Charlotte; N. C. Med. Coll., 1906	1906	1908
Petteway, George H., Charlotte; N. C. Med. Coll., 1913	1913	1914
Phillips, C. C., Charlotte; N. C. Med. Coll., 1912	1912	1917
Pressly, Geo. W., Charlotte, (Hon.); Jeff. Med. Coll., 1892	1895	1896
Rankin, Watson S, Charlotte, (Hon.); Univ. of Md., 1901	1901	1901
Ranson, J. Lester, Charlotte; N. C. Med. Coll., 1911	1911	1912
Ray, F. L., Charlotte; Univ. of Va., 1919	1919	1922
Rea, G. L., Charlotte; N. C. Med. Coll., 1906	1920	1933
Robinson, C. W., Charlotte; Univ. of Pa., 1930; U.N.C.	1930	1932
Ross, Otho B., Charlotte; Univ. of Pa., 1909	1909	1912
Ross, Thos. W., Charlotte; Jeff. Med. Coll., 1927	.....	1930
Sasser, T. J., Charlotte; Univ. Ga. Med. Dept., 1926	1929	1929
Scruggs, W. Marvin, Charlotte; Univ. of Pa., 1914	1914	1920
Selby, W. E., Charlotte; Temple Univ., 1934	1934	1936
Shirley, H. C., Charlotte; Johns Hopkins, 1918	1921	1922
Shull, J. Rush, Charlotte; Univ. of Pa.; U.N.C., 1910	1910	1913

Name and Address	Licensed	Joined State Society
Sloan, H. L., Charlotte; Univ. of Pa., 1911	1913	1914
Smith, F. C., Charlotte; Jeff. Med., 1921; U.N.C.	1921	1925
Sparrow, Thos. De L., Charlotte; Univ. of Pa., 1920	1920	1923
Squires, Claude B., Charlotte; Jeff. Med. Coll., 1919; U.N.C.	1919	1921
Taylor, Frank V., Charlotte; N. C. Med. Coll., 1915	1915	1936
Taylor, H. C., Charlotte, Chadwick Sta.; Tenn. Med., 1886	1910	1915
Thompson, S. R., Charlotte; N. C. Med. Coll., 1914	1914	1915
Todd, L. C., Charlotte; Univ. of Mich., 1918	1920	1920
Townsend, M. L., Washington, D. C.; Indiana Med. Coll., 1906	1912	1913
Tucker, John H., Charlotte, (Hon.); Univ. of Va., 1899	1901	1904
Tydeman, F. W. L., San Francisco, Calif.; N. C. Med. Coll., 1912	1912	1918
Wannamaker, Edward J., Jr., Charlotte; Univ. of Pa., 1921	1924	1924
Ward, W. C., Pineville; Univ. of Louisville	1931	1934
Whisnant, Albert M., Charlotte, (Hon.); P. and S., Balt., 1893	1893	1899
White, Thomas Preston, Charlotte; Univ. of Pa., 1922	1924	1925
Winkler, Harry, Charlotte; Rush Med. Coll., 1929	1931	1931
Wishart, Wm. E., Charlotte; N. C. Med. Coll., 1911	1911	1911

MITCHELL COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Gouge, A. E., Bakersville; Med. Coll. of Va., 1917	1917	1920
McBee, Paul, Bakersville, Virginia, 1930	1930	1933
Peterson, C. A., Spruce Pine; N. C. Med. Coll., 1907	1907	1908

MONTGOMERY COUNTY SOCIETY

President:	.....	.....
Secretary: Charles Daligny, Troy, (Hon.); Univ. of Paris, 1878	1889	1891
Harris, W. T., Troy; Med. Coll. of Va., 1925	1926	1927
Ingram, Charles B., Mt. Gilead, (Hon.); Jeff. Med. Coll., 1886	1886	1892
McMillan, J. M., Candor; P. and S., Atlanta, 1909	1909	1911
Nicholson, N. G., Jr., Mt. Gilead; N. C. Med. Coll., 1917	1917	1920
Rankin, Pressly R., Mt. Gilead; N. C. Med. Coll., 1910	1910	1912
Skeen, L. B., Troy; Univ. Md., 1935	1935	1936
Thompson, Alexander Frank, Troy, (Hon.); Med. Coll. of Indiana, 1895; U.N.C.	1895	1904

MOORE COUNTY SOCIETY

President: W. C. Mudgett, Southern Pines; Maryland Med. Coll., 1903	1908	1911
Secretary: R. G. Rosser, Vass; N. C. Med. Coll., 1909	1909	1917
Boseman, Claude Alfred; Pinebluff; Univ. Pa., 1927	1927	1936
Chester, P. J., Southern Pines; N. C. Med. Coll., 1913	1913	1920
Dickie, J. W., Southern Pines; Jeff. Med. Coll., 1918	1920	1921
Felton, R. L., Jr., Carthage; Univ. of Pa., 1927; U.N.C.	1927	1929
Kemp, Malcolm Drake, Pinebluff; Wash. Univ., 1930	1930	1936
McLeod, A. H., Aberdeen, (Hon.); Balt. Med. Coll., 1896; U.N.C.	1896	1904
McLeod, Vida C., Southern Pines; Baylor Univ., 1919	1931	1931
McLeod, W. G., Southern Pines; Baylor Univ., 1921	1926	1927
Marr, W. M., Pinehurst; Tufts Coll. Med. Sch., Boston, 1907	1909	1915
Milliken, J. S., Southern Pines; Jeff. Med. Coll., 1915; U.N.C.	1915	1916
Monroe, C. R., Pinehurst; Univ. of Md., 1924; U.N.C.	1925	1928
Overcash, W. E., Southern Pines; Univ. of Pa., 1926; U.N.C.	1926	1934
Shields, Henry B., Carthage, (Hon.); Atlanta Med. Coll., 1882	1887	1901

Name and Address	Licensed	Joined State Society
Street, M. E., Glendon, (Hon.); P. and S., Balt., 1893	1893	1902
Symington, John, Carthage; Univ. of Md., 1902	1927	1928
Stutz, Greer, Southern Pines; Coll. of Va., 1934	1934	1936
Willcox, J. W., West End, (Hon.); Univ. of N. C., 1906	1906	1906

NASH—See Edgecombe-Nash Counties

NEW HANOVER COUNTY SOCIETY

President: A. McR. Crouch, Wilmington; Jeff. Med. Coll., 1916; U.N.C.	1916	1918
Secretary: Donald Koonce, Wilmington; Univ. of Pa., 1929	1929	1934
Barefoot, Graham B., Wilmington; Jeff. Med. Coll., 1923	1923	1924
Bellamy, Robert H., Wilmington, (Hon.); Jeff. Med. Coll., 1902; U.N.C.	1902	1902
Bulluck, Ernest S., Wilmington; Univ. of Md., 1911	1911	1911
Carter, W. D., Wilmington; S. C. Med. Coll.	1935	1936
Coddington, H. A., Wilmington; Univ. of Md., 1911	1915	1917
Cranmer, J. B., Wilmington, (Hon.); Univ. of N. C., 1905	1905	1906
Crumpler, James Fulton, Wilmington; Bellevue Hosp. Med. Sch., 1930	1930	1935
Elliott, A. H., Wilmington; Jeff. Med. Coll., 1919; U.N.C.	1919	1921
Evans, J. E., Wilmington; Univ. of Md., 1916	1916	1916
Fales, Robert, Wilmington; Jefferson	1932	1936
Farthing, L. E., Wilmington; Univ. of N. C., 1906	1906	1913
Fay, Oliver Frederick, Wilmington; Med. Coll. Va., 1930	.....	1935
Freeman, J. D., Wilmington; Med. Coll. of Va., 1918	1921	1922
Galloway, Walter Curtis, Wilmington, (Hon.); Washington Univ., 1874	1880	1880
Hare, R. B., Wilmington; Med. Coll. of S. C., 1930	1933	1934
Harriss, Andrew H., Wilmington, (Hon.); Medico-Chir., Phila., 1893	1894	1894
Hoggard, J. T., Wilmington; Univ. Med. Coll., Rich., 1906	1906	1922
Hooper, Joseph W., Wilmington; Univ. of Md., 1909	1912	1919
Jewett, Robert D., Wilmington, (Hon.); Univ. of Va., 1888	1890	1890
Johnson, Geo. W., Wilmington; Univ. of Pa., 1920; U.N.C.	1920	1921
Koonce, S. Everett, Wilmington, (Hon.); P. and S., Balt., 1896	1896	1900
Lancaster, Wm. Jesse, Wilmington; Atlanta Sch. of Med.	1911	1935
McEachern, Duncan, Wilmington; Med. Coll. Va., 1932	1932	1935
Mebane, W. C., Wilmington, (Hon.); N. C. Med. Coll., 1905; U.N.C.	1905	1906
Mebane, W. C., Jr., Wilmington; 1931	1932	1934
Moore, W. Houston, Wilmington; Jeff. Med. Coll., 1910; U.N.C.	1910	1911
Murchison, D. R., Wilmington; Johns Hopkins, 1916	1922	1923
Robertson, James F., Wilmington; Univ. of Pa., 1913	1913	1916
Sidbury, J. B., Wilmington; Columbia Univ., N. Y., 1912	1915	1916
Sloan, D. B., Wilmington; Univ. of Pa., 1914; U.N.C.	1914	1920
Sullivan, Victor, Wilmington; 1931	1931	1934
Wessell, John C., Wilmington, (Hon.); Univ. of Md., 1900	1900	1900

NORTHAMPTON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Fleetwood, Jos. A., Conway; Tulane, 1921	1921	1923
Lewis, H. W., Jackson, (Hon.); Univ. of N. Y., 1877	1889*	1887
Lister, J. L., Jackson; Med. Coll. of Va., 1896	1896	1909
Sewell, Marion H., Jackson; Med. Coll. of Va.	1926	1927

* Registered.

ONSLOW COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Corbett, J. P., Swansboro; Wash. Univ. Sch. of Med., 1928; U.N.C.	1928	1930
Cox, E. L., Jacksonville, (Hon.); Univ. of Md., 1889	1889	1892

ORANGE—See Durham-Orange

PAMLICO COUNTY SOCIETY

President: D. A. Dees, Bayboro; Balt. Med. Coll., 1903	1903	1905
Secretary: J. J. Purdy, Oriental; Med. Coll. of Va., 1900	1914	1915
Daniels, O. C., Oriental, (Hon.); Med. Coll. of Va., 1903; U.N.C.	1903	1906
McCotter, St. Elmo, Bayboro; P. and S., Atlanta, 1908	1908	1909

PASQUOTANK-CAMDEN-CURRITUCK-DARE COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Fearing, Isaiah, Elizabeth City, (Hon.); P. and S., Balt., 1896	1896	1904
Gill, Jos. A., Elizabeth City	.....	1936
Griggs, W. T., Poplar Branch, (Hon.); Univ. of Va., 1896	1896	1901
Johnston, W. W., Manteo; N. C. Med. Coll., 1913	1913	1920
Kenfield, H. W., Hatteras; Univ. of Mich., 1906	1924	1933
Peters, W. A., Elizabeth City; Med. Coll. of Va., 1915	1915	1916
Sawyer, W. W., Elizabeth City, (Hon.); Univ of Md., 1903; U.N.C.	1903	1904
Walker, H. D., Elizabeth City, (Hon.); Univ. of Md., 1902	1902	1902
Ward, I. A., Elizabeth City; Univ. of N. C., 1907	1907	1915
White, W. H. C., Elizabeth City; Univ. of Va., 1922	1929	1929
Williams, Claude B., Elizabeth City; Univ. Coll. Med., Richmond, 1903	1903	1907

PENDER COUNTY SOCIETY

PERQUIMANS—See Chowan-Perquimans

PERSON COUNTY SOCIETY

President:	.....	.....
Secretary: H. M. Beam, Roxboro; Columbia Univ., 1918	1918	1919
Clay, E. L., Timberlake; Univ. of Kentucky, 1929	1929	1933
Gentry, Geo. W., Roxboro; Univ. of N. C., 1910	1910	1911
Lewis, S. V., Roxboro; Med. Coll. Va., 1916	1916	1936
Love, Bedford E., Roxboro, (Hon.); Univ. of Md., 1904	1904	1905
Merritt, John H., Woodsdale, Rt. 1; Univ. of N. C., 1906	1907	1908
Nichols, Austin F., Roxboro; Univ. of N. C., 1908	1908	1909

PITT COUNTY SOCIETY

President: S. M. Crisp, Greenville; Univ. of Pa., 1923; U.N.C.	1923	1925
Secretary: W. K. McDowell, Greenville; Jefferson, 1931	1931	1934
Armistead, D. B., Greenville; Med. Coll. Va., 1931	1935	1936
Barrett, J. M., Greenville; Univ. of Pa., 1926; U.N.C.	1926	1927
Basnight, Thos. G., Stokes, (Hon.); Univ. of Md., 1904	1905	1907
Beasley, E. B., Fountain; Univ. of Pa. School of Med., 1911, U.N.C.	1911	1915
Brooks, F. P., Greenville; Univ. of Mich., 1933	1933	1935
Brown, W. M. B., Greenville; Med. Coll. Va., 1929	1929	1931
Davis, F. M., Greenville; Harvard Med. Sch., 1930	1934	1935

Name and Address	Licensed	Joined State Society
Dixon, G. G., Ayden; Med. Coll. of Va., 1915; U.N.C.	1915	1917
Ennett, N. T., Greenville	.....	1934
Frizzelle, M. T., Ayden; Univ. Coll. of Med., Richmond, 1907	1907	1909
Haar, F. B., Greenville; Jeff. Med. Coll., 1932	1932	1935
Liverman, J. S., Winterville	.....	1934
Mewborn, J. M., Farmville; Med. Coll. Va., 1932	1932	1935
Nobles, Jos. E., Greenville, (Hon.); Jeff. Med. Coll., 1899; U.N.C.	1899	1902
Pace, K. B., Greenville; Jeff. Med. Coll., 1914; U.N.C.	1914	1920
Skinner, Louis Cotton, Greenville, (Hon.); Univ. of Md., 1901	1901	1903
Smith, Joseph, Greenville; Med. Coll. of Va., 1914	1916	1920
Taylor, Chas. W., Kings Park, N. Y.; Med. Coll. Va., 1933	1933	1935
Tucker, Earl Van, Grifton; Med. Coll. of Va., 1930	1930	1935
Watson, Thomas M., Greenville; Tulane Univ., 1919	1919	1920
Winstead, J. L., Greenville; Med. Sch. of Univ. Md., 1925; U.N.C.	1925	1930
Wooten, W. I., Greenville; Jeff. Med., 1920; U.N.C.	1920	1920

POLK COUNTY SOCIETY

President: M. C. Palmer, Tryon; Med. Coll. of S. C., 1910; U.N.C.	1911	1914
Secretary: A. J. Jervey, Tryon; Med. Coll. of S. C., 1905	1923	1925
Grady, Wm. Earle, Tryon, (Hon.); Univ. of Md., and P. and S., 1894	1895	1899
Smith, D. L., Saluda and Spartanburg, S. C.; S. C. Med. Coll., 1903	1926	1927

RANDOLPH COUNTY SOCIETY

President:	.....	.....
Secretary: J. H. Soady, Asheboro; Toronto Univ., 1906	1924	1926
Barnes, Dempsey, Asheboro; Med. Coll. of Va., 1925	1925	1927
Barnes, J. T., Asheboro; Med. Coll. of Va., 1929	1929	1932
Gregg, A. D., Liberty; Med. Coll. of S. C., 1913	1927	1928
Griffin, H. L., Asheboro; Med. Coll. of Va., 1926	1926	1928
Hubbard, Charles C., Farmer, (Hon.); Jeff. Med. Coll., 1888	1890	1900
Johnson, J. R., Ramseur; Med. Coll. of Va., 1927	1927	1929
Redding, Alex. H., Cedar Falls, (Hon.); Coll. of P. and S., Balt., 1887	1889*	1900
Sumner, G. H., Asheboro; Tulane Univ., 1923	1923	1924
Sykes, R. P., Asheboro; Tulane Med. Coll., 1929	1929	1932

RICHMOND COUNTY SOCIETY

President: W. H. Parsons, Ellerbe; N. C. Med. Coll., 1916	1916	1919
Secretary: A. C. Everett, Rockingham; Univ. of Md., 1897	1897	1903
Bristow, C. O., Rockingham; Jeff. Med. Coll., 1918	1920	1921
Caddell, G. C., Hoffman; N. C. Med. Coll., 1912	1912	1930
Dalton, B. B., Rockingham; Duke, 1932	1933	1935
Garrison, R. B., Hamlet; Univ. Md., 1933	1933	1935
Hatcher, M. A., Hamlet; Med. Coll. of Va., 1918	1920	1921
Henry, T. B., Rockingham; Columbia Univ. Coll. P. and S., N. Y., 1917; U.N.C.	1920	1921
Howell, W. L., Ellerbe; N. C. Med. Coll., 1910	1910	1911
James, W. D., Hamlet; Jeff. Med. Coll., 1908; U.N.C.	1908	1908
Kinsman, Henry F., Hamlet, (Hon.); Univ. of Vermont, 1894	1897	1904
Ledbetter, James McQ., Rockingham, (Hon.); Vanderbilt Univ., 1894; U.N.C.	1894	1903

* Registered.

Name and Address	Licensed	Joined State Society
Long, Z. F., Rockingham; Univ. of Pa., 1928; U.N.C.	1928	1930
Milham, C. G., Hamlet; Jefferson, 1927	1927	1930
Terry, Wm. Calvin, Hamlet; N. C. Med. Coll., 1911	1912	1914

ROBESON COUNTY SOCIETY

President: C. T. Johnson, Red Springs; Jeff. Med. Coll., 1920	1920	1922
Secretary: N. O. Benson, Lumberton; Med. Dept. Univ. of Ga., 1930	1933	1934
Allen, G. C., Lumberton; Rush Med. Coll., 1932	1933	1934
Baker, Horace M., Lumberton; Harvard Med. School, 1917	1919	1919
Beam, R. S., Lumberton; Jeff. Med. Coll., 1912; U.N.C.	1912	1915
Bowman, E. L., Lumberton; Med. Coll. of Va., 1914	1914	1916
Britt, J. N., Lumberton; Atlanta Med. Coll., 1914	1923	1924
Brown, J. P., Fairmont, (Hon.); Univ. of Md., 1883	1889*	1893
Carmichael, Thaddeus W., Rowland; Ky. Univ. Med. Dept., 1904	1911	1919
Faulk, J. G., Pembroke; Med. Coll. of Va., 1931	1931	1932
Hardin, E. R., Lumberton; Univ. of Ga., 1911	1915	1920
Hayes, A. H., Fairmont; Atlanta Med. Coll., 1917	1917	1919
Hedgepeth, Cary, Lumberton; Wake Forest, 1931; Northwestern Univ., 1933	1933	1936
Hedgpeth, L. R., Lumberton; Univ. of Md., 1933	1933	1934
Hodgin, H. H., Red Springs; Univ. of Md., 1905; N. C. Med. Coll., 1906	1906	1907
Holmes, A. B., Fairmont; Jeff. Med. Coll., 1910	1910	1914
Johnson, Thomas C., Lumberton, (Hon.); Med. Coll. of Va., 1903	1903	1903
Knox, John, Jr., Lumberton; Univ. of Md., 1906	1907	1907
McClelland, Joseph O., Maxton; Med. Coll. of Va., 1908	1912	1913
McIntyre, Stephen, Lumberton; Jeff. Med. Coll., 1928	1928	1930
McMillan, R. D., Red Springs; Univ. of Md., 1910; U.N.C.	1911	1912
Martin, J. A., Lumberton; Med. Coll. of Va., 1915	1915	1917
Nash, J. Fred, St. Pauls; N. C. Med. Coll., 1914	1914	1916
Poole, Claude T., St. Pauls; N. C. Med. Coll., 1909	1909	1913
Ricks, Leonard E., Fairmont, (Hon.); Med. Coll. of Va., 1896	1896	1913
Smith, John McNeill, Rowland; Jeff. Med. Coll., 1908	1908	1909
Townsend, R. G., St. Pauls; Tulane, 1927	1927	1934
Walton, G. B., Chadbourne; Tulane Univ., 1930	1930	1935

ROCKINGHAM COUNTY SOCIETY

President:	.....	.....
Secretary: B. F. Cozart, Reidsville; Med. Coll. of Va., 1931	1931	1931
Carter, P. C., Madison; Univ. of Md., 1916	1916	1920
Casteen, Kenan, Leaksville; Univ. of Bellevue Hosp., Med. Coll., 1918	1919	1921
Cummings, M. P., Reidsville; Jeff. Med. Coll., 1911; U.N.C.	1911	1914
Ferneyhough, W. T., Reidsville; W. of M., 1916	1926	1927
Fetzer, P. W., Madison; Univ. of Va. Dept. of Med., 1916	1916	1920
Hester, William, Reidsville; Jeff. Med. Coll., 1926; U.N.C.	1929	1930
Jett, Samuel G., Reidsville; Univ. of the South, 1903	1908	1911
Johnson, W. A., Reidsville; N. C. Med. Coll., 1907	1909	1910
McAnally, James McG., Reidsville; Univ. of Pa., 1927; U.N.C.	1927	1927
McBryde, M. H., Milton; Univ. Coll. of Med., Richmond, 1901	1901	1904
McGehee, John Wm., Reidsville, (Hon.); Univ. of Md., 1904	1904	1905
Ray, John B., Leaksville, (Hon.); Balt. Med. Coll., 1898	1898	1898
Ray, S. P., Leaksville; Univ. of Pa.; U.N.C.	1929	1931

* Registered.

Name and Address	Licensed	Joined State Society
Regnoles, Ernest, Mayodan	.....	1936
Rudd, P. D., Reidsville	.....	1935
Tyner, Carl V., Leaksville; Univ. and Bellevue Hosp. Med. Coll., N. Y., 1916	1916	1919
Wilson, N. G., Madison; N. C. Med. Coll., 1914	1914	1914

ROWAN COUNTY SOCIETY

President: Edward B. Clement, Salisbury; Jeff. Med. Coll., 1906; U.N.C.	1906	1913
Secretary: T. W. Seay, Spencer; Univ. of Md., 1921	1922	1924
Black, O. R., Landis; N. C. Med. Coll., 1914	1914	1918
Brown, Clarence E., Salisbury; N. C. Med. Coll., 1918	1920	1921
Brown, G. A., Mt. Ulla, (Hon.); Univ. Coll. of Med., 1897	1897	1898
Busby, G. F., Salisbury; Johns Hopkins, 1932	.....	1936
Coleman, L. A. Salisbury; Univ. Alabama, 1912	1927	1935
Eagle, J. C., Spencer; Jeff. Med. Coll., 1923	1923	1925
Flemming, Giles M., Cleveland; Emory Univ., 1919	1919	1921
Frazier, J. W., Salisbury; Jeff. Med. Coll., 1924	1924	1927
Lowery, J. R., Salisbury; Univ. of Md., 1904; U.N.C.	1904	1913
McCutchan, Frank, Salisbury; Univ. of Va., 1920	1927	1928
Marsh, Frank B., Salisbury; Jeff. Med. Coll., 1919; U.N.C.	1919	1922
Monk, Henry L., Salisbury, (Hon.); Med. Coll. of Va., 1899; U.N.C.	1899	1903
Newman, Harold H., Salisbury; Johns Hopkins, 1913	1914	1916
Peeler, John H., Salisbury, (Hon.); Univ. Coll. of Med., 1899	1899	1904
Robertson, L. H., Salisbury; Univ. of Pa., 1929; U.N.C.	1929	1931
Shafer, Irving E., Salisbury; N. C. Med. Coll., 1914	1914	1914
Sigman, Frederick G., Spencer; Univ. Med. Coll. of Va., 1909	1909	1910
Slate, Wesley C., Spencer; Univ. of Tenn., 1903	1903	1913
Spencer, Frederick B., Salisbury; Univ. of N. C., 1909	1909	1911
Stokes, Jas. Ernest, Salisbury, (Hon.); Univ. of Md., 1892	1900	1901
Tatum, Walter Lowe, Salisbury; Jeff. Med. Coll., 1922	1922	1924
West, Robert M., Salisbury, (Hon.); Med. Coll. of Va., 1900	1900	1904
Whicker, Max, China Grove	.....	1934
Whitfield, Wm. Cobb, Salisbury, (Hon.); Univ. of Md., 1884; U.N.C.	1884	1884
Woodson, Charles W., Salisbury; Columbia Univ., P. and S., 1904	1905	1907

RUTHERFORD COUNTY SOCIETY

President: H. W. Knight, Bostic; Baltimore Med. Coll., 1903	.....	1934
Secretary: C. F. Glenn, Rutherfordton; Univ. of Louisville	1927	1928
Bardin, R. M., Rutherfordton; Tulane Univ., 1929	1934	1935
Biggs, Montgomery H., Rutherfordton; Univ. of Pa., 1897	1907	1908
Bostic, Wm. C., Forest City, (Hon.); Chattanooga Med. Coll., 1899; N. C. Med. Coll., 1905	1905	1906
Bostic, W. C., Jr., Forest City; Univ. of Pa., 1926	1926	1927
Crawford, Robt. H., Rutherfordton; Johns Hopkins, 1914	1920	1921
Duncan, Amos C., Forest City; N. C. Med. Coll., 1919	1919	1920
Eaves, Rupert S., Rutherfordton; Med. Coll. Va., 1932	1932	1933
Elliotte, Wm., Forest City; Univ. Ga., 1934	1934	1935
Gold, Charles F., Rutherfordton; Univ. of N. C., 1910	1910	1911
Harrill, L. B., Caroleen, (Hon.); Chattanooga Med. Coll., 1897	1902	1904
Head, W. T., Campobello, R. 4, S. C.; Atlanta Coll. P. and S., 1911	1911	1923
Hunt, J. F., Spindale; Univ. of Tenn., 1900	1900	1912
King, Robt. Rogers, Ellenboro; Med. Dept. Univ. of Ark.	1931	1932
Logan, F. W. H., Rutherfordton; N. C. Med. Coll., 1916	1916	1919
Lovelace, Thos. C., Henrietta; N. C. Med. Coll., 1917	1920	1920

Name and Address	Licensed	Joined State Society
Moss, G. O., Cliffside; Emory Univ., 1927	1927	1929
Norris, Henry, Waverly Mills, S. C.; Univ. of Pa., 1897	1907	1908
Reid, George P., Forest City, (Hon.); Univ. Coll. of Med., Va., 1895	1894	1899
Rucker, Adin Adam, Rutherfordton; Univ. of Md., 1908	1908	1909
Verner, Carl Hugh, Forest City; P. and S., Atlanta, 1912	1923	1927
Washburn, J. M., Lake Lure	.....	1936
Wiseman, P. H., Avondale; Med. Coll. of Va., 1925	1925	1926

SAMPSON COUNTY SOCIETY

President: Wm. H. Sloan, Garland; Univ. of Md., 1916; U.N.C.	1916	1920
Secretary: A. N. Johnson, Garland; Univ. of Pa., 1933	1933	1935
Brewer, J. Street, Roseboro; Jeff. Med. Coll., 1919	1919	1921
Crumpler, Paul, Clinton; Univ. of Tenn., 1907	1907	1908
Kerr, John D., Clinton; Univ. of Md., 1908; U.N.C.	1908	1910
Lee, J. Marshall, Newton Grove; Med. Coll. of Va., 1916	1920	1923
Matthews, James O., Clinton, R.F.D., (Hon.); Univ. Coll. of Med., Va., 1897	1897	1902
Nelson, W. H., Clinton; Univ. of Richmond, 1934	1934	1936
Parker, O. L., Clinton; Med. Coll. of Va., 1918	1918	1919
Royal, D. M., Salemburg; Med. Coll. of Va.	1926	1928
Sessoms, E. T., Roseboro; N. C. Med. Coll., 1915	1915	1917
Sikes, Gibson L., Salemburg, (Hon.); Univ. Coll. of Med., Va., 1900; U.N.C.	1900	1902
Small, Victor R., Clinton; Ohio State Univ. Med. Coll., 1916	1920	1921
Starling, W. P., Clinton; Univ. of Richmond, 1933	1933	1936

SCOTLAND COUNTY SOCIETY

President: Everett Alex Livingston, Gibson; Univ. of Md., 1912	1912	1913
Secretary: James G. Pate, Gibson; Univ. of Pa., 1916	1916	1917
Buchanan, L. T., Laurinburg; Jeff. Med. Coll., 1913	1913	1917
Erwin, Evan A., Laurinburg; Med. Coll. of S. C., 1912	1912	1913
Gibson, John S., Gibson; Univ. of Md., 1905; U.N.C.	1905	1907
James, Albert W., Laurinburg; Jeff. Med. Coll., 1918	1918	1921
James, F. P., Laurinburg; Univ. of Pa., 1916; U.N.C.	1916	1917
John, Peter, Laurinburg, (Hon.); Univ. of Md., 1897; U.N.C.	1897	1904
Summerlin, Harry, Laurinburg; S. C. Med. Coll., 1933	.....	1935
Wilkes, Marcus B., Laurel Hill; N. C. Med. Coll., 1912	1923	1923

STANLY COUNTY SOCIETY

President: Lucius Victor Dunlap, Albemarle; Univ. of N. C., 1909	1909	1910
Secretary: Madge B. Gaskin, Albemarle; Med. Coll. S. C., 1926	1933	1934
Allen, Jos. A., New London, (Hon.); Univ. Coll. of Med., Va., 1901	1901	1904
Bigler, V. L., Albemarle; Univ. Pittsburgh, 1925	1926	1927
Brunson, E. P., Albemarle; Jeff. Med. Coll., 1921	1922	1934
Campbell, Jas. I., Norwood; N. C. Med. Coll.	1898	1898
Dickson, M. S., Oakboro; Med. Coll. of S. C., 1927	1927	1929
Drewry, W. H., Badin; Med. Coll. of Va., 1926	1926	1936
Gaskin, J. S., Albemarle; Med. Coll. of S. C., 1925	1929	1931
Gaskin, Lewis R., Albermarle; Med. Coll. of S. C., 1921	1924	1926
Hathcock, Thomas A., Norwood, (Hon.); Univ. of Md., 1893; U.N.C.	1893	1904
Hill, Wm. Isaac, Albemarle, (Hon.); Univ. of Med., and P. and S., Balt., 1897	1897	1904
Laton, James F., Albemarle; N. C. Med. Coll., 1904	1904	1910

Name and Address	Licensed	Joined State Society
Lentz, C. M., Albemarle; N. C. Med. Coll., 1909	1909	1910
Moore, D. Bain, Badin; Univ. Coll. of Med., Va., 1913	1913	1915
Outlaw, J. K., Albemarle; Syracuse Univ. 1923	1926	1934
Shaver, W. T., Albemarle; Univ. of Md., 1918	1920	1921
Tally, B. T., Albemarle; Jeff. Med. Coll., 1921	1921	1922

STOKES COUNTY SOCIETY

(See Forsyth County)

President:	.....	.....
Secretary:	.....	.....

SURRY-YADKIN COUNTIES SOCIETY

President:	.....	.....
Secretary: T. C. Britt, Mt. Airy; Jeff. Med. Coll., 1921	1921	1925
Ashby, E. C., Mt. Airy; Univ. of Pa., 1914	1914	1916
Bernard, Holman, Pilot Mountain; Med. Coll. of Va., 1912	1914	1919
Flippin, J. M., Pilot Mountain, (Hon.); Coll. P. and S., Md., 1884	1893*	1900
Flippin, Samuel T., Siloam, (Hon.); N. C. Med. Coll., 1898	1898	1898
Haywood, C. L., Jr., Elkin; Harvard, 1927	1929	1930
Leak, Wharton G., East Bend; N. C. Med. Coll., 1900	1899	1904
Lovill, Robert Jones, Mt. Airy; Univ. of Md., 1910; U.N.C.	1910	1912
Martin, Moir S., Mt. Airy; Univ. Coll. of Med., Va., 1905	1909	1916
Parks, Hugh, Elkin; Jeff. Med. Coll., 1921; U.N.C.	1921	1928
Royall, M. A., Elkin, (Hon.); P. and S., Balt., 1885, OALR	1889*	1904
Salmons, H. C., Elkin; N. C. Med. Coll. 1904	1904	1908
Shore, T. W., Boonville	.....	1904
Sikes, Ralph J., Mt. Airy; Med. Coll. Va., 1934	.....	1934
Stone, William M., Dobson; N. C. Med. Coll., 1906	1906	1907
Tillotson, S. F., Pilot Mountain; N. C. Med. Coll., 1905	1905	1922
Wellborn, William R., Elkin; N. C. Med. Coll., 1905	1908	1913

SWAIN COUNTY SOCIETY

President:	.....	.....
Secretary: Edward J. Johnson, Cherokee; Univ. of Iowa, 1930	.....	1936
Bacon, Harold Lyle, Bryson City; Northwestern Univ., 1934	1935	1936
Kirchberg, Roy Wm., Whittier	.....	1936
Leiby, G. M., Bryson City; Vanderbilt Univ., 1931; U.N.C.	1933	1934

TRANSYLVANIA COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Newland, Chas. L., Brevard; Med. Coll. of Va., 1927	1928	1932
Osborne, Jos. E., Rosman; Med. Coll. of Va., 1930	1930	1930

TYRRELL—See Martin-Washington-Tyrrell

UNION COUNTY SOCIETY

President:	.....	.....
Secretary: C. A. Bolt, Marshville; Med. Coll. of S. C., 1926	1929	1929
Blair, M. P., Marshville; Med. Coll. of Va., 1895	1895	1895
Garren, R. H., Monroe, (Hon.); Univ. of Nashville, 1900	1901	1904
Goudelock, Jno. J., Monroe; Med. Coll. S. C., 1923	1924	1924
Guyton, C. L., Monroe; Med. Coll. of S. C., 1926	1926	1933

* Registered.

Name and Address	Licensed	Joined State Society
Love, William M., Monroe; N. C. Med. Coll., 1915	1915	1919
Neal, John W., Monroe, (Hon.); N. Y. Univ. Med. Coll., 1884	1887	1904
Neece, K. E., Monroe; Washington Univ., 1929	1929	1934
Ormand, J. W., Monroe; Univ. of Cinn. Coll. of Med., 1926, U.N.C.	1926	1927
Smith, G. M., Monroe; N. C. Med. Coll., 1914	1914	1919

VANCE COUNTY SOCIETY

President:	.....	.....
Secretary: Vance B. Rollins, Henderson; Univ. of Pa., 1932	1932	1936
Bass, H. H., Henderson, (Hon.); Univ. Coll. of Med., 1899	1899	1900
Bass, H. H., Jr., Henderson; Univ. of Pa.; U.N.C.	1929	1930
Mitchell, Z. P., Henderson; Med. Coll. of Va., 1920	1920	1921
Newcombe, A. P., Henderson; Jeff. Med. Coll., 1922; U.N.C.	1922	1924
Newell, H. A., Henderson, (Hon.); P. and S., Balt., 1906	1906	1906
Royster, Thomas S., Henderson; Univ. of Pa., 1916; U.N.C.	1916	1924
Wheeler, J. H., Henderson; Jeff. Med. Coll., 1918; U.N.C.	1918	1920

WAKE COUNTY SOCIETY

President: I. M. Proctor, Raleigh; Univ. of N. C., 1913; Univ. of Pa.	1915	1915
Secretary: N. H. McLeod, Raleigh; Univ. of Pa., 1930; U.N.C.	1930	1932
Abernethy, Claude O., Raleigh; Univ. of N. C., 1906	1906	1907
Ashby, J. W., Raleigh; Univ. of Md., 1905	1921	1922
Bell, Carl W., Raleigh; Coll. of P and S., Balt., 1914	1915	1916
Buffaloe, J. S., Garner, (Hon.); Balt. Med. Coll., 1900	1900	1904
Bugg, C. R., Raleigh; Johns Hopkins Med. Sch., 1922	1924	1925
Bulla, A. C., Raleigh; N. C. Med. Coll., 1915	1915	1918
Burt, B. W., Holly Springs, (Hon.); P. and S., Balt., 1886	1886	1904
Campbell, Alton C., Raleigh; Univ. of N. C., 1910	1910	1912
Carpenter, Coy C., Wake Forest; Syracuse Univ., 1924	1924	1927
Caviness, V. S., Raleigh; Jeff. Med. Coll., 1921; U.N.C.	1921	1925
Caviness, Zebulon M., Raleigh, (Hon.); Univ. of N. C., 1903	1903	1903
Cheek, C. E., Fuquay Springs; Univ. Coll. of Med., Va., 1912	1912	1914
Combs, Jos. J., Raleigh; Columbia Univ. of C. and P., 1926	1926	1929
Cooper, G. M., Raleigh, (Hon.); Univ. Coll. of Med., Rich., 1905	1905	1904
Cozart, W. S., Fuquay Springs; Med. Coll. of Va., Rich., 1914	1914	1917
Dewar, Wm. B., Raleigh; Univ. of Pa., 1920; U.N.C.	1920	1923
Dickinson, K. L., Raleigh; Univ. of Minn., 1932	1935	1936
Edwards, C. J., Raleigh; Med. Coll. of Va., 1917	1921	1923
Eldridge, Chas. P., Raleigh; Univ. of Pa., 1926; U.N.C.	1926	1927
Finch, O. E., Raleigh; Jeff. Med. Coll., 1915; U.N.C.	1915	1917
Flowers, C. E., Zebulon; Med. Coll. of Va., 1913; U.N.C.	1915	1916
Fox, P. G., Raleigh; Med. Coll. of Va., 1922	1923	1929
Fox, Robert Eugene, Raleigh; Univ. of Pa., 1926	1926	1929
Gibson, M. R., Raleigh; Univ. of Md., 1905; U.N.C.	1905	1914
Glascock, H. G., Jr., Raleigh; U.N.C., 1932; N.Y.N., 1934	1934	1936
Goodwin, O. S., Apex; Jeff. Med. Coll., 1923; U.N.C.	1923	1926
Greene, Phares Yates, Raleigh; Northwestern Univ., 1933	1932	1934
Hackler, R. H., Raleigh	.....	.....
Hall, W. D., Raleigh	.....	1934
Hamilton, John H., Raleigh; Med. Sch. of Harvard, 1916	1926	1926
Haywood, Hubert B., Jr., Raleigh; Univ. of Pa., 1909	1909	1910
Herring, E. H., Raleigh; Univ. of Pa., 1930	1930	1934
Hicks, V. M., Raleigh; Jeff. Med. Coll., 1918; U.N.C.	1918	1921
Hill, M. D., Raleigh; Med. Coll. of Va., 1928	1928	1931

Name and Address	Licensed	Joined State Society
Horton, M. C., Raleigh; Univ. Coll. of Med., Va., 1903	1911	1911
Horton, W. C., Raleigh, (Hon.); P. and S., Balt., 1897	1896	1904
Hunter, J. P., Cary; Jeff. Med. Coll., 1919	1919	1921
Jones, Carey C., Apex; Jeff. Med. Coll., 1920	1920	1923
Judd, Eugene C., Raleigh; Univ. of Pa., 1911; U.N.C	1911	1912
Judd, Glenn B., Varina; Duke Univ., Vanderbilt Univ., 1932	.....	1935
Judd, James M., Varina, (Hon.); Balt. Med. Coll., 1897	1897	1901
King, E. S., Wake Forest; Jeff. Med. Coll., 1927	1927	1930
Kitchin, Thurman D., Wake Forest; Jeff. Med. Coll., 1908	1908	1908
Knox, Augustus W., Raleigh, (Hon.); Bellevue Hosp. Med. Coll., 1874	1878	1880
Knox, J. C., Raleigh; Univ. of Md., 1924	1924	1932
Lamm, Isaac W., Raleigh, (Hon.); Univ. Coll. of Med., Va., 1899	1899	1900
Lane, Bessie, Raleigh; Women's Med. Coll. of Pa., 1921	1921	1926
Lawrence, B. J., Raleigh; Jeff. Med. Coll., 1918; U.N.C	1918	1920
Liles, L. C., Raleigh; Med. Coll. of Va., 1930; U.N.C	1930	1933
Lowery, E. F., Raleigh; Univ. of Louisville, 1917	.....	1934
McDowell, F. C., Siler City; Univ. of Pa., 1902	1913	1916
McGee, James Wm., Raleigh, (Hon.); Bellevue Hosp. Med. Coll., 1888	1888	1888
McGee, Robert L., Raleigh; Univ. of Pa., 1932	1932	1935
McGeehee, M. W., Raleigh; Univ. of Va., 1928	1935	1936
Mackie, Geo. C., Wake Forest; Univ. of Pa., 1928	1928	1932
Miller, Lila Bonner, Raleigh	.....	1936
Mitchener, J. S., Raleigh; Johns Hopkins Univ., 1915	1915	1918
Neal, Kemp P., Raleigh; Harvard, 1917	1920	1921
Neal, Paul N., Raleigh; Harvard, 1919	1920	1921
Noble, R. P., Raleigh; Univ. of N. C., 1907	1907	1916
Oliver, A. S., Raleigh; Jeff. Med. Coll., 1914; U.N.C	1914	1919
Owen, J. F., Dix Hill, Raleigh; Jeff. Med. Coll	1920	1927
Powers, Frank P., Raleigh; Univ. of Pa., 1927	1927	1928
Rand, E. G., Raleigh; Univ. of Pa., 1926	1926	1929
Ray, O. L., Raleigh, (Hon.); Univ. Coll. of Med., Richmond, 1899	1899	1904
Rhodes, J. S., Raleigh; Harvard, 1929	1929	1936
Richardson, W. P., Raleigh; Med. Coll. of Va., 1928	1928	1929
Rogers, Jas. Rufus, Raleigh, (Hon.); P. and S., Balt., 1886	1886	1904
Root, Aldert S., Raleigh; Univ. of Pa., 1911	1911	1913
Royster, Hubert A., Raleigh, (Hon.); Univ. of Pa., 1894	1894	1895
Ruark, R. J., Raleigh; Univ. Pa., 1931	1931	1934
Smith, W. G., Wendell; Med. Coll. of Va	1926	1928
Smith, Sidney, Prof. Bldg., Raleigh; Tulane Univ., 1925	1925	1930
Stimpson, R. T., Raleigh; Univ. of Pa., 1927; U.N.C	1927	1929
Thompson, Hugh A., Raleigh; Univ. of Pa., 1914	1914	1917
Turner, H. G., Raleigh; Univ. of Pa., 1906; U.N.C	1907	1925
Vann, H. M., Wake Forest; Jeff. Med. Coll., 1917	1920	1923
Ward, W. T., Raleigh; Univ. of Md., 1925	1925	1927
Watson, John B., Raleigh; Univ. of N. C., 1908	1908	1909
Weathers, R. R., Knightdale; Richmond Med. Coll	1926	1928
West, Louis N., Raleigh; Jeff. Med. Coll., 1912; U.N.C	1912	1915
Wilkerson, Charles B., Raleigh; Univ. of N. C., 1906	1906	1908
Wilkinson, C. P., Wake Forest; Tulane Univ., 1922	1922	1923
Wilkinson, R. W., Jr., Wake Forest; Tulane Univ., 1922	1923	1924
Winston, P. H., State Hospital, Raleigh; Med. School of Va., 1929; U.N.C	1929	1930

Name and Address	Licensed	Joined State Society
Wright, J. B., Raleigh, (Hon.); Univ. Coll. of Med., Va., 1899; U.N.C.	1899	1900
Yarborough, Frank C., Cary; University of Pa., 1923; U.N.C.	1925	1926

WARREN COUNTY SOCIETY

Holt, T. J., Warrenton; Med. Coll. of Va., 1904; U.N.C.	1904	1911
Peete, C. H., Warrenton; Univ. of Pa., 1903	1906	1911

WASHINGTON—See Martin-Washington-Tyrrell

WATAUGA-ASHE COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Hagaman, J. B., Boone; 1915	1915	1915
Jones, D. C., Lansing; Univ. of Pa., 1927	1930	1930
Jones, T. Lester, Lansing; Va. Med. Coll., 1909; U.N.C.	1909	1917
Perry, H. B., Boone; N. C. Med. Coll., 1905	1905	1922
Tugman, B. W., West Jefferson	1914	1917

WAYNE COUNTY SOCIETY

President: David J. Rose, Goldsboro; Tulane Univ., 1922; U.N.C.	1922	1924
Secretary: L. J. Harrell, Goldsboro; Univ. of Md., 1930	1930	1934
Allen, A. L., Goldsboro; S. C. Med. Coll., 1933	1934	1935
Benton, Geo. Ruffin, Fremont; Med. Coll. of Va., 1901	1905	1904
Best, D. E., Goldsboro; Univ. of Md., 1924	1924	1926
Bizzell, M. E., Goldsboro; Tulane Univ., 1923	1923	1925
Cobb, Donnell B., Goldsboro; Univ. of Pa., 1921; U.N.C.	1921	1926
Cobb, W. H., Jr., Goldsboro, (Hon.); Jeff. Med. Coll., 1889	1889	1890
Dale, G. C., Goldsboro; Univ. of Pa., 1925; U.N.C.	1925	1927
Epstein, H. G.		1936
Ham, Clem, Goldsboro; Med. Coll. of S. C., 1926	1929	1930
Howard, C. E., Goldsboro; Univ. of Pa., 1925; U.N.C.	1925	1927
Irwin, Henderson, Eureka; Univ. of Md., 1912	1914	1916
Ivey, H. B., Goldsboro; Univ. Coll. of Med., Richmond, 1911	1911	1917
Linville, W. C., Goldsboro; Univ. of Md., 1903; U.N.C.	1903	1923
McCuiston, A. M., Mount Olive; N. C. Med. Coll., 1911	1911	1917
Miller, Robert B., Goldsboro, (Hon.); Med. Coll. of Va., 1898; U.N.C.	1900	1902
Person, Edgar Cooper, Pikeville; Med. Coll. of Va., 1905	1905	1908
Rand, C. H., Fremont; Univ. of Pa.	1926	1928
Smith, Wm. H., Goldsboro; Univ. of Pa., 1906; U.N.C.	1907	1912
Strosnider, Charles F., Goldsboro; Univ. of Md., 1909	1910	1913
Sutton, William G., Seven Springs; Jeff. Med. Coll., 1889	1889	1896
Warrick, L. A., Goldsboro; Geo. Washington Univ., 1923	1923	1924
Whelpley, Frank L., Goldsboro; Missouri Univ., 1902	1918	1918
Wilkins, J. W., Mount Olive; Med. Coll. of Va., 1913; U.N.C.	1913	1917
Woodard, A. G., Goldsboro; Univ. of N. C., 1907	1907	1909
Zealy, A. H., Jr., Goldsboro; Harvard, 1930	1932	1934

WILKES-ALLEGHANY COUNTIES SOCIETY

President: G. T. Mitchell, Wilkesboro; Jeff. Med. Coll., 1927; U.N.C.	1927	1928
Secretary: James H. McNeill, North Wilkesboro; Geo. Wash. Univ. Med. School, 1926	1926	1927
Eller, Albert J., Wilkesboro, (Hon.); P. and S., Balt., 1893	1895	1898

Name and Address	Licensed	Joined State Society
Gilreath, Frank H., N. Wilkesboro, (Hon.); Univ. of Nashville, 1898	1898	1898
Hubbard, Fred C., North Wilkesboro; Jeff. Med. Coll., 1918; U.N.C.	1919	1921
Hutchens, E. M., North Wilkesboro; N. C. Med. Coll., 1896	1896	1904
Long, L. L., Laurel Springs; Lincoln Memorial Univ., 1916	1916	1934
Miles, Walter W., Champion; Univ. of Tenn. Med., 1931	1933	1934
Newton, Wm. K., North Wilkesboro; Med. Coll. of Va., 1931	1932	1933
Phillips, E. N., North Wilkesboro; Med. Coll. of Va., 1930	1930	1935
Sink, C. S., North Wilkesboro; N. C. Med. Coll., 1912	1912	1913
Smith, Harold Benj., North Wilkesboro; Med. Coll. of S. C.	1929	1930
Thompson, C. A., Sparta; Med. Coll. Va., 1924	1925	1935
Triplett, W. R., Purlear; N. C. Med. Coll., 1914	1915	1920

WILSON COUNTY SOCIETY

President:	.....	.....
Secretary: Badie T. Clark, Wilson; Univ. Ga., 1930	1934	1935
Anderson, Wade H., Wilson, (Hon.); Univ. of Va., 1902	1904	1904
Bell, G. E., Wilson; Jeff. Med. Coll., 1921	1921	1922
Best, Henry B., Wilson; Univ. of N. C., 1907	1907	1908
Blackshear, T. J., Wilson; Emory Univ., 1914	1923	1924
Bradshaw, T. G., Wilson; Med. Coll. of Va., 1909	1924	1924
Darden, D. B., Stantonsburg; Univ. of Pa., 1921; U.N.C.	1924	1926
Dickinson, Elijah T., Wilson, (Hon.); Med. Coll. of Va., 1895	1895	1900
Fike, Ralph L., Wilson; Med. Coll. S. C., 1932	1933	1934
Hackney, Ben H., Lucama; Tulane Univ., 1911; U.N.C.	1911	1913
Hunter, W. C., Wilson; Univ. of Pa., 1928; U.N.C.	1928	1931
McClees, E. C., Elm City; Med. Coll. of Va., 1917	1920	1920
Mitchell, G. W., Wilson; Univ. of Coll. Med., Va., 1913	1913	1920
Moore, Chas. E., Wilson, (Hon.); Bellevue Hosp. Med. Coll., 1875	1875	1875
Mullen, Malcolm P., Wilson; Emory Univ. Med. School, 1927	1927	1928
Outland, R. B., Elm City; Univ. Pa., 1932	1933	1936
Person, T. E., Stantonsburg; N. C. Med. Coll., 1911	1911	1914
Pittman, M. A., Wilson; Jeff. Med. Coll., 1921	1924	1923
Putney, R. H., Elm City; Med. Coll. of Va., 1914	1914	1920
Saliba, Michael M., Wilson; Balt. Med. Coll., 1897	1910	1910
Simons, C. E., Wilson; 1930	1930	1935
Sloan, William S., Wilson; Vanderbilt Univ., 1933	1933	1935
Smith, F. G., Wilson; Univ. Ga. Med. Dept., 1922	1927	1931
Smith, A. Jones, Black Creek; Univ. of Pa., 1921; U.N.C.	1921	1923
Strickland, Arthur T., Wilson; Wash. Univ., 1932	1932	1935
Strickland, Ernest L., Wilson; Med. Coll. of Va., 1916	1916	1917
Williams, Albert F., Wilson, (Hon.); Univ. of Md., 1901; U.N.C.	1901	1904
Willis, H. C., Wilson; P. & S., Memphis, 1911	1916	1924
Woodard, B. L., Kenly; Univ. of Md., 1933	.....	1935
Woodard, C. A., Wilson; Univ. of Va., 1904	1904	1920
Woodard, G. B., Wilson; Med. Coll. of Va., 1915	1915	1916

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Secretary:	.....	.....
Cheadle, C. M., Burnsville; Keokuk Med. Coll., 1898	1919	1921

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